Hecate Strait Multi-Species Bottom Trawl Survey, *CCGS W.E. Ricker*, May 19 to June 7, 2003

E.M. Choromanski, G.D. Workman, and J. Fargo

Fisheries and Oceans Canada
Science Branch, Pacific Region
Pacific Biological Station
Nanaimo, British Columbia
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HECATE STRAIT MULTI-SPECIES BOTTOM TRAWL SURVEY, *CCGS W.E. Ricker,* MAY 19 TO JUNE 7, 2003

By

E.M. Choromanski, G.D. Workman, and J.Fargo

Fisheries and Oceans Canada

Science Branch, Pacific Region

Pacific Biological Station

Nanaimo, British Columbia, V9T 6N7

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Abstract

Choromanski E.M., Workman, G.D., and Fargo, J. 2005. Hecate Strait multi-species bottom trawl survey, CCGS *W.E. Ricker*, May 19 to June 7, 2003. Can. Data Rep. Fish. Aquat. Sci. 169: viii + 85 p.

The Hecate Strait multi-species bottom trawl survey was conducted between May 19 and June 07, 2003 aboard the Canadian Coast Guard Science Vessel (CCGS) W.E. RICKER. The primary objective of the survey was to assess the status of groundfish resources in Hecate Strait by collecting detailed catch and biological data for all species captured during the survey. This report summarises the fishing event, catch and biological data collected.

The total catch from usable sets was 63,548 kg including 67 fish species and 74 invertebrate species. There were 96 usable sets. The most abundant species were spotted ratfish (*Hydrolagus colliei,* 11,832 kg, 18.6%) and English sole (*Parophrys vetulus*) (19,931 kg, 17.2%). The dominant invertebrate in the catch was Dungeness crab (*Cancer magister*) (1,201 kg, 1.9%). Twenty-four species totalling 40,325 specimens were sampled during the survey including 7,495 English sole 5,351 southern rock sole (*Lepidopsetta bilineata*), 4,375 Dover sole (*Microstomus pacificus*), 3,956 spotted ratfish and 1,873 Pacific cod (*Gadus macrocephalus*). Structures for ageing were collected from 15 species totalling 3,783 specimens including 740 English sole, 670 Dover sole, 400 southern rock sole, 471 petrale sole, 420 big skate (*Raja binoculata*) and 80 lingcod (*Ophiodon elongatus*).

Forty-two CTD casts were completed in a uniform grid over the entire survey area. A temperature and depth recorder was mounted on the headrope of the trawl, and a bottom contact sensor was mounted on the footrope for every tow. For the first time a trawl-mounted video camera was used to observe fish behaviour in front of and around the footrope of the trawl.

Résumé

Choromanski E.M., Workman, G.D., and Fargo, J. 2005. Hecate Strait multi-species bottom trawl survey, CCGS *W.E. Ricker*, May 19 to June 7, 2003. Can. Data Rep. Fish. Aquat. Sci. 1169: viii + 85 p.

Un relevé plurispécifique au chalut de fond dans le détroit d'Hécate a été effectué entre le 19 mai et le 17 juin 2003 à bord du W.E. RICKER, un navire scientifique de la Garde côtière canadienne. L'objectif principal de ce relevé était d'évaluer l'état des populations de poissons démersaux dans le détroit d'Hécate en recueillant des données statistiques et biologiques précises sur toutes les espèces capturées dans le cadre du relevé. Le présent rapport est une synthèse des données obtenues.

Au total, 63 548 kg de poissons et d'invertébrés marins ont été capturés, dont 67 espèces de poissons et 74 espèces d'invertébrés, à l'issue de 96 traits exploitables. Les espèces les plus abondantes se sont avérées être la Chimère d'Amérique (*Hydrolagus colliei*, 11 832 kg, 18,6 %) et le Carlotin anglais (*Parophrys vetulus*, 19 931 kg, 17,2 %). Le Crabe dormeur (*Cancer magister*, 1201 kg, 1,9 %) dominait quant à lui les prises d'invertébrés. Au total, 40 325 spécimens représentant 24 espèces ont été capturés au cours du relevé, dont 7 495 carlotins anglais, 5 351 fausses limandes (*Lepidopsetta bilineata*), 4 375 limandes-soles (*Microstomus pacificus*), 3 956 chimères d'Amérique et 1 873 morues du Pacifique (*Gadus macrocephalus*). Des prélèvements visant à déterminer l'âge des spécimens ont été effectués sur 15 espèces, soit sur un total de 3 783 spécimens, dont 740 carlotins anglais, 670 limandes-soles, 400 fausses limandes, 471 plies de Californie, 420 raies biocellées (*Raja binoculata*) et 80 morues-lingues (*Ophiodon elongatus*).

Quarante-deux relevés CTP ont été effectués suivant une grille régulière couvrant l'ensemble de la zone étudiée. Un thermomètre et un bathymètre étaient montés sur la ralingue supérieure du chalut tandis qu'un capteur permettant de détecter le contact du chalut avec le fond était monté sur la ralingue inférieure. Une caméra montée sur le chalut a été pour la première fois utilisée pour observer le comportement des poissons en avant et autour de la ralingue inférieure.

Introduction

The Hecate Strait multi-species bottom trawl survey is the only continuous time series of fisheries independent data for groundfish on Canada's west coast. This series of surveys was initiated in 1984 with three objectives: 1) to study inter-annual and inter-seasonal changes in abundance and distribution of marine fishes in Hecate Strait, 2) collect environmental data and incorporate environmental and habitat correlates into abundance indices, and 3) investigate trophic interactions among and within the identified marine fish assemblages. With the passage of time objective one has come to be the primary focus of the survey with data being used directly in the assessments of Pacific cod (*Gadus macrocephalus*), English sole (*Parophrys vetulus*), southern rock sole (*Lepidopsetta bilineata*), Dover sole (*Microstomus pacificus*) and arrowtooth flounder (*Atheresthes stomias*) and indirectly in the assessment of most other species of groundfish on the coast. These data are vital to the development of COSEWIC/SARA status reports for candidate species and for monitoring recovery of species listed as threatened or endangered

Summer surveys (May-June) were conducted in 1984, 1986, 1987, 1989, 1991, 1993, 1995, 1996, 1998, 2000, and 2002 (Fargo *et al.* 1984, 1988; Westrheim *et al.* 1984; Foucher *et al.* 1988; Antonsen *et al.* 1990; Wilson *et al.* 1991; Hand *et al.* 1994; Workman *et al.* 1996, 1997; Choromanski *et al.* 2002a, 2002b, 2004). One winter survey was conducted in January-February of 1986 (Fargo and Davenport 1986).

Objectives of the 2003 survey were to:

- Collect catch rate data for commercial groundfish species in Hecate Strait with emphasis on flatfish and Pacific cod;
- collect detailed biological data from all species encountered;
- collect detailed species composition data for ecosystem studies (over 240 species have been encountered in Hecate Strait);
- collect environmental data (CTD, ADCP, SBE 39);
- observe fish behaviour in front of the trawl and associated bottom habitat using a trawl-mounted video camera;
- monitor gear performance using a trawl-mounted video system, SIMRAD ITI net mensuration equipment and a bottom contact sensor.

The current report presents results for all species including length frequencies, length – weight relationships, catch per unit effort (CPUE) by tow for major species, catch distributions by survey stratum and maturity summaries. Survey results are used directly in stock assessments to provide advice to managers of the groundfish fishery.

Methods and Materials

Survey Design

The survey design has been previously described in Westrheim *et al.* (1984) and Fargo *et al.* (1984). The survey frame encompasses Hecate Strait and part of Dixon entrance from 52° 30' N to 54° 30' N and from 130° 5' W to 131° 45' W. It covers a depth range of 10 to 80 fathoms (fm) (18 – 146 m, Fig. 1). The survey area was divided into 10 by 10 nautical mile (nm) cells where each 10- fathom (18.5 m) depth interval within a cell constituted a sampling stratum. The cells were designated 1 to 5 west to east and A to L north to south. Sampling strata are indicated by combining the area and the depth. For example station A206 would indicate the 60 to 69 fm stratum in cell A2. Most sample sites are repeated on successive surveys. When sample sites within a sampling stratum were new it was left up to the fishing master to locate a suitable trawl site based on knowledge of the grounds and soundings.

Fishing Vessel and Gear

The survey was conducted using the research trawler *CCGS W.E. RICKER*, a 57.3 m stern trawler. Trawl gear consisted of three Yankee 36 nets and their design is described in Carrothers (1988). Specific materials used to build this version of the Yankee 36 trawl are reported in Workman *et al.* 1996 and in Figure 2. The net was constructed of 89 mm (3.5") stretched mesh polyethlene web of 3.5 mm twine. Double 89 mm mesh web 10 meshes deep was used in the lower wings and at the front of the bottom belly as guard mesh. The headline is either 22 mm corkline or 24 mm Polysteel rope 18.3 m (60') long rigged with with forty 20 cm (8") plastic floats. The 26.1 m (85') bolch line is of 22 mm (7/8") polypropylene rope, the 25.4 m (82' 6") fishing line is 9 mm longlink chain. The codend is made of the same 89 mm, 3.5 mm poly web. A 25 mm knotless braided nylon web cod-end liner was used throughout the survey. The nets were equiped with either a soft or hard bottom footrope 24.4 m (80') in length and the nets designated as "Hard bottom net" or "Soft bottom net". The soft bottom footrope was was built using 16 mm (5/8") cable packed with 100 mm (4") and 150 mm (6") rubber disks and hung off the fishing line with 20 cm (8") toggle chains. The bosum section of the hard bottom footrope was 3.7 m (12') in length with five evenly spaced 41 cm (16") diameter rubber rollers separated with 15 cm (6") diameter rubber discs, spacers and toggles. The bunt sections of the foot-rope are 5.2 m (17') long and consist of four 36 cm (14") rubber half eggs approximately 1 m (3') apart starting at the bosom end of the section. Wing sections consisted of one 36 cm (14") diameter half egg at each end of the sections with one 30 cm (12") half egg in the middle. In the bunt and wing sections, half eggs are separated by up to five 15 cm (6") diameter by 20 cm (8") length rubber spacers. Chain (16 mm, 5/8 in) was used throughout in the construction of the hard-bottom footrope. The net was rigged with 18.3 m (10 fm) sweeps and bridles and 13.7 m (7.5 fm) door legs for a total length from trawl door

to net wing tip of 50.4 m. Polyvalent steel trawl doors (1250 kg USA Jet, Model P) provided a horizontal opening of 12 - 16 m and a vertical opening of 2.5 – 3.5 m.

Fishing Operations

Fishing occurred during daylight hours only. Once the vessel arrived on station the fishing masters decided the direction to tow and whether the area required sounding prior to setting the gear. Hauls were 30 minutes in duration measured from the time the warp drums were locked to the time net retrieval began. The Chief scientist in conjunction with the ships officers recorded start / end times and positions, tow duration, direction and speed, depth fished, and environmental observations on standard Groundfish bridge log forms.

Trawl Monitoring

SIMRAD ITI net mensuration gear was used to measure door spread, wingtip spread, headrope height, depth and temperature during several trawl sets. The ITI system consists of sensors that are attached to the net, a ram-mounted transducer that receives signals from the sensors via an acoustic link, and a deck unit that processes and displays the information from the sensors. Alternatively, a "Third Wire" net sonar, Furuno FS20, was used to monitor net dimensions throughout a tow. The FS20 consists of a dual head scanning sonar, which is mounted in the middle of the trawl headrope. Data is transmitted to a deck unit aboard the ship via a coaxial cable; images of the trawl are displayed on a computer monitor showing a cross section of the trawl. The width and height of the trawl is measured off the display and recorded by the chief scientist on supplemental bridge log forms. A MacMarine bottom contact sensor (BCS) recorded net contact with the bottom. This device is hung off the foot rope on a short chain bridle and measures tilt angle with an angle of 90 degrees indicating the device is vertical and an angle of 0 degrees indicating horizontal. During net deployment the BCS records ~ 90 degrees and when on bottom records 0 – 10 degrees indicating good contact between the footrope of the net and the bottom. BCS data are downloaded several times a day using an infrared link to a data shuttle. A SeaBird Electronics SBE 39 temperature and depth recorder was attached to the headrope of the net and logged temperature and depth at 10-second intervals throughout the day. These data were also downloaded several times a day to minimize the risk of data loss in the event one of the sensors fails. For the first time a trawl-mounted video camera was used to monitor net performance, view bottom substrate characteristics and observe fish behaviour in front of and around the footrope of the net.

Catch and Sample Processing

Once the net was retrieved at the end of a tow the codend was dumped into a hopper below deck through an open hatch on deck. The catch was spilled from the hopper onto a conveyor system by regulating the opening of a door in the lower side of the hopper. As entire catch moved along the conveyor system they were sorted by species into separate baskets. Baskets were weighed to the nearest 0.1

kg using a large capacity, motion-compensating electronic balance (Marel Model M1100/M2000, 60 kg capacity). Weights were recorded on standard groundfish catch composition forms. Small catches of small species were on occasion weighed using a smaller electronic top - loading balance (Marel Model 2200 with 6 kg capacity). When catches were too large to sort practically they were sub-sampled for species composition by selecting a sub-sample of 6 – 12 baskets for sorting and then either visually estimating total catch or weighing the entire unsorted catch in baskets. The sub-sample was then sorted to species and the species proportions were applied to the total catch weight to arrive at the catch for each species.

Baskets were selected opportunistically for biological sampling. Although a fixed selection protocol was not in place samples were selected to meet the biological sample targets outlined in Table 1. Three distinct types of biological samples were collected for targeted species. 1) Length frequency or 2) length frequency by sex samples 3) complete biological sampling includes determining length, sex, maturity, weight and collecting an age structure for each specimen in the sample were collected using tally strips or fish measuring board. Tally strips are white plastic strips which have lines etched across them at 1 cm intervals to form columns, fish are placed on the tally strip and a tick is marked in the column at the appropriate length. Ticks were marked in groups of 5, 4 down ticks and one cross tick. Once the sample was complete the number of ticks at each length were recorded on length frequency forms. Length was measured to the nearest millimetre on a measuring board. Then the body was cut open to determine the sex and the level of maturation using macroscopic maturity stages (Appendix 1). Finally the specimens' cranium is opened and the otoliths are removed from either side of the fish's brain using forceps. Otoliths were cleaned and stored in a 50:50 solution of glycerine/water with 1 g thymol added per litre (MacLellan, 1999). For lingcod, rays 4-10 of the second dorsal fin were collected for ageing and for skates, vertebrae were collected.

Calculations

Length - weight regressions were fit to the following function using MS EXCEL:

$$W_i = a\, L_i^{\,b}$$

where W_i is the weight of specimen i in grams, L_i is length of fish i in mm and a, b are estimated parameters.

Catch per unit effort (CPUE) was computed for species of interest as follows:

$$Cpue_{si} = \frac{C_{si}}{d_i}$$

where C_{si} is the catch in kilograms of species s in set i, and d_i is the effort in hours for set i.

Environmental Monitoring

During previous Hecate Strait surveys XBT (Expendable Bathythermograph), STD (Salinity, Temperature, Depth), or CTD (Conductivity, Temperature and Depth) casts have been conducted after each trawl set. This year we departed from the practice and conducted CTD casts at night in a uniform grid over the entire survey frame (Fig. 3). This was done to obtain a better picture of the oceanographic conditions over the entire survey area and not just at trawl tow locations. Another new environmental data set that was collected for the first time successfully was a continuous record of the sea surface temperature, surface salinity, vessel position, course, speed, irradiance, wind speed, and barometric pressure. A software utility, Cdaq, was used to log continuous data from a variety of sensors attached to the ship's on board network.

Results

Fishing Operations

A total of 102 bottom trawls were conducted between May 19 and June 7, of which 96 were usable. Unusable sets were: 3, 34, 68, 100, 101, and 102. A summary of trawl stations occupied, total catch and gear used is presented in Table 2. Tow locations have been plotted on a map of the survey area in Figure 1. Appendix 2 presents detailed fishing event and catch information by set number including block designation, start / end position and times, depths fished and catch in kilograms by species.

Fishing operation commenced at White Rocks ground and proceeded northwest through the fishing grounds of Oval Hill, Venus, Fingers, Butterworth, Dundas, Two Peaks, and McIntyre Bay. Fishing then proceeded southerly covering the major fishing grounds of SW Seal Rocks, Shell Ground, South Bonilla, Ole Spot, Horseshoe and Moresby. The most northerly tow (37) was made west Dundas Island and the most southerly tow (96) was off Lyell Island.

For most sets, the soft bottom net configuration was used. The hard bottom net was used for sets 1, 2, 3, 69, 70, 71, 73, 79, 80 and 93 - 99. SIMRAD ITI net mensuration equipment was used during sets 7, 21, 22, and 23. A Furuno FS 20 net sonar was used for sets 25 - 46.

Fourteen sets (13, 14, 15, 17, 22, 23, 50, 51, 52, 56, 57, 64, 66, and 69) were sub-sampled for species composition (Westrheim (1967).The total catch weight was estimated visually for sets 14, 15, 22, 23, 56 and 57. For the remaining sub-sampled sets, (13, 17, 50, 51, 52, 64, 66 and 69) the entire catch was weighed. When sets were sub-sampled for species composition, several species were still "whole haul" sorted including: Pacific cod, sablefish, petrale sole, Pacific halibut and skates.

The survey was completed in two legs with a ship crew change and science personnel change in Prince Rupert on the 27th of May, 2003. The survey itinerary and staffing are presented in Tables 3, 4 and 5.

Data Processing

All data were recorded on standard groundfish "Bridge Log", "Catch Composition", "Length Frequency" and "Biological Sample" data forms. Data sheets were reviewed nightly throughout the survey to ensure consistency in numbering, coding, and to look for any obvious omission on the part of data recorders. Data were keypunched using a stand-alone field database shell, "GFBioField". Once keypunching was complete data were proofed and uploaded to the corporate ORACLE database "GFBioOra". Recording and keypunching errors were identified and corrected during upload. These data reside in the Groundfish Biological database "GFBio" (Kate Rutherford, custodian) under Trip_ID 50200.

Catch Data

The total catch from usable sets was 63,548 kg, comprising 67 fish species and 74 invertebrate species. Seven species accounted for over 75% of the total catch weight: Spotted ratfish (*Hydrolagus colliei*, 11,831 kg, 18.6%), English sole (10,931 kg, 17.2%), arrowtooth flounder (9,651 kg, 15.2%), Dover sole (4,621 kg, 7.3%), rex sole (*Glyptocephalus zachirus*, 4,483 kg, 7.1%), southern rock sole (*Lepidopsetta bilineata*, 3,342 kg, 5.3%), and Pacific tomcod (*Microgadus proximus*, 3,322 kg, 5.2%). By species group, flatfish accounted for 62% of the total catch weight, Selachii 23% and roundfish 10%. The most common species overall was spotted ratfish which occurred in 90 of 96 usable sets, the most common flatfish was English sole which occurred in 82 sets and the most common roundfish was Pacific cod which occurred in 80 sets. Dungeness crab (*Cancer magister*) was the dominant invertebrate by weight accounting for just under 2 % of the total catch weight for 1,201 kg (1.9 %) occurring in the catch 27 times. The most common invertebrate was the sunflower star (*Pycnopodia helianthoides*) which occurred in the catch 56 times. Total catch by species and frequency of occurrence is presented in Table 6. Table 7 summarizes total catch weight for selected species by depth stratum. Rock sole was most abundant in the shallowest stratum (1), English sole in stratum 3, and Dover and rex soles were most abundant in depth stratum 5. Arrowtooth flounder peaked in stratum 6 while Pacific cod was most abundant in stratum 5. Total catch, effort and catch per unit effort by set are presented in Table 8 for southern rock sole, English sole, Dover sole, petrale sole, arrowtooth flounder, rex sole, lingcod and Pacific cod.

Biological Data

A summary of collected biological data is presented in Table 9. Table 10 lists the number of specimens collected from each depth stratum. Appendix 3 catalogues all samples collected during the survey. During the survey, 40,325 specimens from 24 species were bio-sampled. Complete biological sampling (length, weight, maturity, sex, and otoliths) was performed on 175 arrowtooth flounder, 675 Dover sole, 72 flathead sole, 740 English sole, 400 southern rock sole, and 471 petrale sole. Complete biological sampling for skates also included wingspan and vertebrae were collected instead of otoliths and stomachs. This was

done for 442 big skates, 52 longnose skates and 6 sandpaper skates. For lingcod the second dorsal fin was collected from 80 specimens as the preferred ageing structure.

Table 11 summarizes length and weight information by species and sex. Length statistics are based on all available samples but weight statistics were determined from length – weight samples only. Regression parameters for length – weight relationship are presented in Table 12 and Table 13 presents a summary of maturity data for selected species by sex.

Southern rock sole

Fargo and Westrheim (1987) reported the existence of two species of rock sole in Hecate Strait: southern rock sole *(Lepidopsetta bilineata*) and northern rock sole (*Lepidopsetta polyxystra*). Northern rock sole were first identified and reported from Hecate Strait by DFO staff in 1996 (Workman *et al.* 1997). Only southern rock sole were encountered during this survey. Catch per unit effort (kg/hr) was calculated for each set (Table 8) with the maximum of 1098.3 kg/hr for set 56 at SW Seal Rocks (Fig. 1, 4).

Summary statistics for length and weight are presented in Table 11. Length-weight relationships by sex are plotted in Figure 7. Regression parameters are given in Table 12. Length (Fig. 8.) for southern rock sole males ranged from 80 – 400 mm while females ranged from 90 – 550 mm. Modes for both sexes occurred at 180 and 310 mm. A total of 5,351 fish were examined and 400 otoliths were collected. Forty-three percent of males and 35 % of females were immature (Table 13, Fig. 9), 15.5 % of males and 0.4 % of females were in spawning condition (stage 5) and 18% of females and 7% of males were resting (stage 7).

Dover sole

Dover sole occurred in 70 sets with a total catch of 4,622 kg (Table 6). The highest catches were observed in sets 14, 15, and 50 at Butterworth, and sets 60 and 61 at White Rocks (Table 8). The highest CPUE were at 84 and 106 m (Fig. 4 and Table 8). There were 4,375 lengths recorded and 675 otoliths were collected (Table 9). Length – weight regressions by sex are presented in Figure 10 with regression parameter estimates shown in Table 12. Males ranged from 150 – 450 mm in length with a mode at 240 mm and females lengths ranged from 130 – 680 mm with a mode at 250 mm (Fig. 11). For Dover sole, 51% of females and 33 % of males were resting (Fig. 12 , Table 13). Three percent of the females were spent compared to 37 % of the males. One third of the females were maturing compared to 14 % of males.

English sole

English sole were most abundant at Butterworth (Fig. 1) mainly in the 54 - 72 meters depth zone (Table 7). Tow 17 had the highest CPUE (3,891 kg/hr) followed by tow 57 at SW Seals Rocks with 3,702 kg/hr (Fig. 4, Table 8). Males ranged from 110 – 410 mm with the mode at 200 mm; females ranged from 100 – 480 mm with modes at 210 mm and 350 mm (Fig. 14). Females were larger than males overall and were heavier at the same lengths (Fig. 13). Table 13 and Figure 15 summarize

the maturity stages. Most males and females were spent or resting, 41.5% of males were spent compared to 8.1 % of the females while 67.6% of females were resting compared to 38.9% for males.

Petrale sole

The total catch for petrale sole was 409 kg and occurred in 41 sets (Table 6). Most petrale sole catches were under 20 kg/hr yet tows 63 and 64 at White Rocks had CPUE's over 285 kg/hr (Fig. 5, Table 8).The entire catch was sampled with females predominating. Length – weight relationships by sex are presented in Figure 16 and Table 12. Length distributions for males and females (Fig. 17) show a mode for males at 330 mm with a range of 190 - 530 mm. For females the mode was at 360 mm with a range of 200 - 640 mm. Fifty five percent of males and 44% of females were resting (Table 13, Fig. 18), while 20% of males and 31% of females were immature. Twenty and 24% of males and females were maturing respectively.

Arrowtooth flounder

Arrowtooth flounder was most abundant at Butterworth and McIntyre Bay in sets 22 and 30 respectively (Table 8, Fig. 1).There were few males over 600 mm while larger females were common (Fig. 20). Length modes for males were at 150 mm, 230 mm and 440 mm, while for females, modes occurred at 150 mm, 240 mm and 560 mm. Females dominated the samples by a ratio of almost 2:1 (2,086:1,164). Most males (69%) and 92% of females were at the resting stage of maturity (Fig. 21, Table 13).

Other species

Length-weight relationships by sex are presented for rex sole (Fig. 22) for lingcod (Fig. 25), and for Pacific cod (Fig. 28). Most rex sole, 60% of males and 72% of females, were in the resting maturity stage (Table 13, Fig. 24). Length frequency distributions for rex sole are presented in Figure 23, for lingcod in Figure 26 and for Pacific cod in Figure 29. An abundance of younger Pacific cod are evident in the 180 – 380 mm size classes (Fig. 29). Histograms of maturity stages are presented in Figure 24, for rex sole and Figure 27 for lingcod, The majority of male lingcod were either resting (64%) or immature (32%), while 52.7 % of the females were maturing and 23.6 % were immature (Table 13, Fig. 27). Most Pacific cod encountered were immature (Table 13, Fig. 30).

Other data

Forty-two CTD casts were completed in a uniform grid over the survey area (Fig. 3). CTD data is available from the Oceanographic data archive at the Institute of Ocean Science in Sydney, BC, (Joe Linguanti, custodian), under cruise ID 2003-25. Sea-Bird 39 temperature and depth recorder data and Mac Marine Bottom contact data were logged for every tow of the survey. These data are stored in the groundfish biological data database ("GFBIO") at the Pacific Biological station, (Kate Rutherford, custodian), in the "Fishing_Event_Event" table. A continuous record of ship's navigational data, sea surface temperature, plus wind direction and

speed were recorded throughout the survey from a captive Sea-Bird 21 thermosalinograph mounted in the ship's forward machine space, and other sensors mounted on the ship. These data area likewise stored in GFBIO. Video observations bottom type, gear performance, and fish behaviour were successfully recorded from 72 of 96 usable bottom trawl sets. These data are available only as analog video footage and are not archived in a digital format. These data will be the subject of a future publication.

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The assistance of the crew of the *CCGS W.E. Ricker* was most appreciated. Additional science staff who participated in this survey include: Rob Kronlund, Kate Rutherford, Karin Mathias, Vanessa Hodes, Matt Thompson, Charlotte Jordan, Anna Gerrard, and Nina Barton. The Pacific Biological Station ageing laboratory was responsible for ageing collected samples. The authors wish to thank Joe Linguanti and staff at the Institute of Ocean Sciences for processing and archiving the CTD data. Karina Cooke and Brian Krishka reviewed the report and provided many helpful suggestions that improved the final version.

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Tables

Table 1: Target biological sampling objectives by species and fishing ground for the 2003 Hecate Strait multi-species bottom trawl survey.

See footnote 1 for an explanation of sample type designations. Number refers to the target sample size for the area over the course of the survey. "~Catch" Indicates that all the major species in a catch should be sampled, also see footnote 2. For an explanation of area designations see foot note 3 and Figure 1. Rank indicates the relative importance of sampling the species, ranks were assigned to assist the Lab crew chief in prioritising sampling opportunities when workload precluded sampling all species available.

Species	Sample Type	Number	Area	Rank	Comments
Flatfishes					
Arrowtooth flounder	LWSMO LS	200 100 ~ Catch	TP/BW S. Hecate	2	
Dover sole	LWSMO LS	200 200 200 ~ Catch	TP/BW Wh. Rcks. Horseshoe	1	 Sample every tow
English sole	LWSMO LS	300 300 ~ Catch	N. Hecate S. Hecate	1	 Sample every tow
Flathead sole	LWSMO LS	100 100 ~ Catch	N. Hecate S. Hecate	2	
Pacific sanddab	LWSMO LS	100 ~ Catch		3	
Petrale sole	LWSMO	All		1	
Rex sole	LWSMO LS	200 ~ Catch		2	
Rock sole	LWSMO LS	300 300 ~ Catch	N. Hecate S. Hecate	1	Northern rock sole vs. Southern rock sole Sample every tow
Starry flounder	LWSMO Blood plasma	All 15fish		3 1	 For Peter Davies
Yellowtail flounder	LWSMO	50 pc		3	
All other flatfish Sand, Butter, Slender, etc.	LS LWSMO	~Catch 50		3	Otoliths from a single larger set
Rockfishes					
All species	LWSMO	50 pc		3	By species accumulated over entire survey
Elasmobranchs					
Big skate	LSB			1	
Longnose skate	LSB			1	
Spiny dogfish	LS	~Catch		1	
Other Species					
Lingcod	LWSF			1	
Pacific cod	LSM LWSMOF	All Stratified		1	Length stratified 2/cm/sex, 20 – 100 cm

Species	Sample Type	Number	Area	Rank	Comments
Pacific hake	LS	~Catch		2	
Pacific halibut	LS	All		1	
Pacific herring	L	~Catch		2	
Pacific sandlance	L	~Catch		2	
Pacific sardine	L	~Catch		3	
Pacific tomcod	L	~Catch		3	
Sablefish	LWSMO	~Catch		1	
Spotted ratfish	LS	~Catch		3	
Walleye pollock	LWS LWSMOF	~Catch 300		1 2	
Invertebrates					
Dungeness crab	WdSSh	200	Per Area	2	
Time permitting					
Red rock crab	WdSSh	100		3	
Opal squid	L	~Catch		3	Return to PBS
Red squid/Nail squid	Return to PBS			2	Return to PBS
Octopus	W	All		1	
Weathervain scallop	SH	All		2	
Spiny scallop	SH	50		3	
Pink shrimp	CLS	1 kg		3	Return to PBS
Spot prawn	CLS	1kg		3	Return to PBS
Sidestripe shrimp	CLS	1kg		2	Return to PBS
For all inverts record count as well as weight or count for a weighed subsample					

NOTE 1: L=length, W=weight, S=sex, M=maturity, O=otoliths; F=finclip, B=backbones, Wd=width, Sh=shell condition, CL=carapace length, SH=shell height

NOTE 2: "~ catch" means collect a representative sample, i.e. sample more fish if the size range is large, ensure you record catch and sample weights

NOTE 3: TP = Two Peaks fishing ground, BW = Butterworth Rock fishing ground, Wh. Rcks.= White Rocks fishing ground, Horseshoe= Horseshoe fishing ground.

Table 2: Summary of survey stations trawled during the Hecate Strait multi-species bottom trawl survey aboard the CCGS W.E. Ricker, May 19 - June 07, 2003.

Set	Block Designation	Date	Fishing Ground	Total Catch (kg)	Effort (h)	CPUE (kg/h)	Net Type Used
1	E502	22-May-03	WHITE ROCKS	225.50	0.57	397.94	Hard Bottom
2	E503	22-May-03	WHITE ROCKS	573.50	0.50	1147.00	Hard Bottom
3	E504	22-May-03	WHITE ROCKS	415.67	0.57	733.54	Hard Bottom
4	E505	22-May-03	WHITE ROCKS	421.49	0.52	815.79	Soft Bottom
5	E506	22-May-03	WHITE ROCKS	434.70	0.57	767.12	Soft Bottom
6	E406	22-May-03	WHITE ROCKS	734.00	0.53	1376.25	Soft Bottom
7	E403	24-May-03	WHITE ROCKS	204.96	0.68	299.94	Soft Bottom
8	D404	24-May-03	OVAL HILL	343.40	0.52	664.65	Soft Bottom
9	E302	24-May-03	VENUS	231.80	0.50	463.60	Soft Bottom
10	D303	24-May-03	OVAL HILL	227.63	0.50	455.26	Soft Bottom
11	D304	24-May-03	OVAL HILL	702.45	0.52	1359.58	Soft Bottom
12	D302	24-May-03	FINGERS	206.21	0.50	412.42	Soft Bottom
13	D303	24-May-03	BUTTERWORTH	1992.70	0.50	3985.40	Soft Bottom
14	C305	25-May-03	BUTTERWORTH	2041.20	0.50	4082.40	Soft Bottom
15	C304	25-May-03	BUTTERWORTH	2500.00	0.50	5000.00	Soft Bottom
16	C301	25-May-03	DUNDAS	280.21	0.50	560.42	Soft Bottom
17	B301	26-May-03	BUTTERWORTH	2412.30	0.48	4990.97	Soft Bottom
18	B301	26-May-03	BUTTERWORTH	392.27	0.37	1069.83	Soft Bottom
19	B301	26-May-03	BUTTERWORTH	1229.31	0.50	2458.62	Soft Bottom
20	B302	26-May-03	BUTTERWORTH	367.70	0.50	735.40	Soft Bottom
21	B305	26-May-03	BUTTERWORTH	1128.15	0.33	3384.45	Soft Bottom
22	B306	28-May-03	BUTTERWORTH	5896.80	0.52	11413.16	Soft Bottom
23	B304	28-May-03	TWO PEAKS	1360.00	0.25	5440.00	Soft Bottom
24	A303	28-May-03	TWO PEAKS	205.80	0.25	823.20	Soft Bottom
25	A305	28-May-03	TWO PEAKS	370.60	0.25	1482.40	Soft Bottom
26	A306	28-May-03	DUNDAS	525.00	0.25	2100.00	Soft Bottom
27	A307	28-May-03	S OF BARREN ISLAND	673.50	0.25	2694.00	Soft Bottom
28	A306	28-May-03	DUNDAS	351.72	0.33	1055.16	Soft Bottom
29	A307	28-May-03	TWO PEAKS	402.30	0.35	1149.43	Soft Bottom
30	A206	28-May-03	MCINTYRE BAY	1303.40	0.33	3910.20	Soft Bottom
31	B103	29-May-03	MCINTYRE BAY	238.10	0.50	476.20	Soft Bottom
32	B104	29-May-03	BUTTERWORTH	1116.54	0.52	2161.05	Soft Bottom
33	B107	29-May-03	MCINTYRE BAY	512.01	0.33	1536.03	Soft Bottom
34	B203	29-May-03	TWO PEAKS	6.91	0.33	20.73	Soft Bottom
35	A205	29-May-03	TWO PEAKS	202.85	0.50	405.70	Soft Bottom
36	B206	29-May-03	TWO PEAKS	201.24	0.48	416.36	Soft Bottom
37	B207	29-May-03	TWO PEAKS	419.10	0.50	838.20	Soft Bottom
38	B204	29-May-03	TWO PEAKS	776.79	0.20	3883.95	Soft Bottom
39	B205	29-May-03	TWO PEAKS	222.60	0.28	785.65	Soft Bottom
40	B206	29-May-03	TWO PEAKS	229.60	0.35	656.00	Soft Bottom
41	B102	29-May-03	WEST TWO PEAKS	1031.80	0.52	1997.03	Soft Bottom
42	B204	30-May-03	TWO PEAKS	912.90	0.50	1825.80	Soft Bottom
43	B205	30-May-03	TWO PEAKS	1394.20	0.50	2788.40	Soft Bottom
44	B203	30-May-03	TWO PEAKS	847.12	0.50	1694.24	Soft Bottom

Table 2. continued

Set	Block Designation	Date	Fishing Ground	Total Catch (kg)	Effort (h)	CPUE (kg/h)	Net Type Used
45	B202	30-May-03	TWO PEAKS	336.80	0.50	673.60	Soft Bottom
46	B105	30-May-03	WEST TWO PEAKS	821.96	0.52	1590.89	Soft Bottom
47	B106	30-May-03	MCINTYRE BAY	386.00	0.50	772.00	Soft Bottom
48	B201	30-May-03	TWO PEAKS	62.30	0.50	124.60	Soft Bottom
49	B303	30-May-03	BUTTERWORTH	1741.50	0.33	5224.50	Soft Bottom
50	B304	30-May-03	BUTTERWORTH	1203.34	0.27	4512.53	Soft Bottom
51	C301	31-May-03	BUTTERWORTH	1100.00	0.48	2275.86	Soft Bottom
52	C201	31-May-03	BUTTERWORTH	1161.40	0.48	2402.90	Soft Bottom
53	D301	31-May-03	FINGERS	213.14	0.27	799.28	Soft Bottom
54	D201	31-May-03	UNNAMED	348.03	0.52	673.61	Soft Bottom
55	E301	31-May-03	UNNAMED	405.36	0.52	784.57	Soft Bottom
56	E202	31-May-03	SW SEAL ROCKS	2268.00	0.50	4536.00	Soft Bottom
57	E202	31-May-03	SW SEAL ROCKS	2722.00	0.33	8166.00	Soft Bottom
58	F303	31-May-03	SHELL GROUND	197.90	0.25	791.60	Soft Bottom
59	F301	31-May-03	UNKNOWN	399.70	0.33	1199.10	Soft Bottom
60	E405	01-Jun-03	WHITE ROCKS	1231.83	0.50	2463.66	Soft Bottom
61	E405	01-Jun-03	WHITE ROCKS	894.45	0.33	2683.35	Soft Bottom
62	E402	01-Jun-03	WHITE ROCKS	179.45	0.33	538.35	Soft Bottom
63	E403	01-Jun-03	WHITE ROCKS	908.41	0.35	2595.46	Soft Bottom
64	E404	01-Jun-03	WHITE ROCKS	961.00	0.33	2883.00	Soft Bottom
65	F402	01-Jun-03	WHITE ROCKS	194.92	0.33	584.76	Soft Bottom
66	F405	01-Jun-03	WHITE ROCKS	926.50	0.33	2779.50	Soft Bottom
67	F402	01-Jun-03	UNNAMED	420.80	0.33	1262.40	Soft Bottom
68	F403	02-Jun-03	WHITE ROCKS	241.60	0.33	724.80	Soft Bottom
69	F404	02-Jun-03	WHITE ROCKS	648.30	0.38	1691.22	Hard Bottom
70	G405	02-Jun-03	BONILLA	351.04	0.53	658.20	Hard Bottom
71	G406	02-Jun-03	BONILLA	321.40	0.50	642.80	Hard Bottom
72	G405	02-Jun-03	SOUTH BONILLA	587.24	0.50	1174.48	Soft Bottom
73	G404	02-Jun-03	SOUTH BONILLA	388.60	0.50	777.20	Hard Bottom
74	G302	02-Jun-03	OLE SPOT	844.35	0.50	1688.70	Soft Bottom
75	G301	02-Jun-03	UNNAMED	472.85	0.50	945.70	Soft Bottom
76	F302	02-Jun-03	UNNAMED	183.53	0.52	355.22	Soft Bottom
77	G201	02-Jun-03	UNNAMED	208.83	0.43	481.92	Soft Bottom
78	H201	03-Jun-03	OLE SPOT	40.64	0.10	406.40	Soft Bottom
79	H302	03-Jun-03	OLE SPOT	280.75	0.50	561.50	Hard Bottom
80	H301	03-Jun-03	OLE SPOT	153.80	0.52	297.68	Hard Bottom
81	H303	03-Jun-03	OLE SPOT	379.20	0.33	1137.60	Soft Bottom
82	H304	03-Jun-03	SOUTH BONILLA	162.68	0.33	488.04	Soft Bottom
83	H304	03-Jun-03	SOUTH BONILLA	191.46	0.33	574.38	Soft Bottom
84	H405	03-Jun-03	SOUTH BONILLA	172.47	0.33	517.41	Soft Bottom
85	H407	03-Jun-03	SOUTH BONILLA	137.71	0.33	413.13	Soft Bottom
86	H406	03-Jun-03	UNNAMED	146.35	0.35	418.14	Soft Bottom
87	I404	03-Jun-03	UNNAMED	328.98	0.33	986.94	Soft Bottom
88	I303	03-Jun-03	OLE SPOT	234.06	0.33	702.18	Soft Bottom
89	I302	03-Jun-03	OLE SPOT	188.74	0.17	1132.44	Soft Bottom
90	I405	04-Jun-03	EAST HORSESHOE	13.14	0.33	39.42	Soft Bottom

Table 2. continued

Set	Block Designation	Date	Fishing Ground	Total Catch (kg)	Effort (h)	CPUE (kg/h)	Net Type Used
91	J404	04-Jun-03	WEST HORSESHOE	1.60	0.35	4.57	Soft Bottom
92	J503	04-Jun-03	EAST HORSESHOE	18.10	0.33	54.30	Soft Bottom
93	J504	04-Jun-03	EAST HORSESHOE	481.70	0.33	1445.10	Hard Bottom
94	I401	04-Jun-03	CUMSHEWA/REEF IS. FLATS	166.60	0.33	499.80	Hard Bottom
95	I301	04-Jun-03	CUMSHEWA/REEF IS. FLATS	182.90	0.33	548.70	Hard Bottom
96	I301	04-Jun-03	OLE SPOT	327.88	0.50	655.76	Hard Bottom
97	J204	04-Jun-03	REEF ISLAND	714.52	0.50	1429.04	Hard Bottom
98	K403	05-Jun-03	UNNAMED	187.60	0.50	375.20	Hard Bottom
99	K402	05-Jun-03	UNNAMED	154.10	0.48	318.83	Hard Bottom
100	K403	05-Jun-03	UNNAMED	82.96	0.43	191.45	SpareSoft Bottom
101	K506	05-Jun-03	UNNAMED	36.62	0.53	68.66	SpareSoft Bottom
102	K405	05-Jun-03	UNNAMED	30.30	0.33	90.90	SpareSoft Bottom

Table 3: Itinerary of the 2003 Hecate Strait Survey

Date	Activity	Sets
5/19/2003	Load gear, depart Nanaimo ~1800	
5/20/2003	In Transit to Hecate Strait. Arrive Port Hardy, 1500, take on fuel, Embark last staff	
5/21/2003	In Transit to Hecate Strait	
5/22/2003	Commence fishing operations in Browning Entrance, very poor weather	1-6
5/23/2003	Poor weather. Blowing 40 knots SE, no fishing	-
5/24/2003	Blowing 30 Knots SE, working the east side of Hecate Strait	7-13
5/25/2003	Blowing SE 40 – 50 knots, easing in the afternoon, commence fishing 1300	14-16
5/26/2003	Full day of Fishing, moderate weather, ~ 20 –30 knots of wind	17-21
5/27/2003	Crew change in Prince Rupert	-
5/28/2003	Full day of Fishing, weather easing	22-30
5/29/2003	Full day of fishing, weather easing	31-41
5/30/2003	Full day of fishing, weather good	42-50
5/31/2003	Full day of fishing, weather good	51-59
6/1/2003	Full day of fishing, weather good	60-67
6/2/2003	Full day of fishing, weather good	68-77
6/3/2003	Full day of fishing, weather good	78-89
6/4/2003	Full day of fishing, weather good	90-97
6/5/2003	Fished half day, depart for Port Hardy ~ 1400	98-102
6/6/2003	Depart Port Hardy 1100, In transit to Nanaimo	
6/7/2003	Arrive PBS 0800	

Table 4: Senior staff for each leg of the 2003 Hecate Strait multi-species bottom trawl survey.

Role	May 19 – May 27	May 27 – June 7
Vessel Master	Captain Dave Wensley	Captain Sid Webb
Fishing Master	Brian West	Keith Fry
Chief Scientist	Jeff Fargo	Greg Workman
Lab Supervisor	Greg Workman	Ed Choromanski

Table 5: Survey staff and their affiliations.

Jeff Fargo, PBS - Groundfish (May 19 – 27)	Karin Mathias, PBS - Groundfish, Contract staff
Greg Workman, PBS - Groundfish	Vanessa Hodes, PBS - Groundfish, Contract staff
Rob Kronlund, PBS - Groundfish (May 19 – 27)	Nina Barton, Student, - Simon Fraser University
Ed Choromanski, PBS - Groundfish	Charlotte Jordan, Student, - Malaspina College
Kate Rutherford, PBS - Groundfish (May 27 – June 7)	Anna Gerrard, Student, - Princeton University
Matt Thompson, PBS - Pelagics	

Table 6: Catch by species and frequency of occurrence of species captured in usable sets during the Hecate Strait multi-species bottom trawl survey, May 19 to June 7, 2003.

Common Name	Species Code	Species latin name	Total Catch (kg)	Proportion of total catch (%)	Frequency Occurrence (N)
Flatfish					
English Sole	628	*Parophrys vetulus*	10931.4	17.20	82
Arrowtooth Flounder	602	*Atheresthes stomias*	9651.6	15.19	69
Dover Sole	626	*Microstomus pacificus*	4621.7	7.27	70
Rex Sole	610	*Glyptocephalus zachirus*	4482.6	7.05	61
Southern Rock Sole	621	*Lepidopsetta bilineata*	3343.3	5.26	66
Pacific Sanddab	596	*Citharichthys sordidus*	1863.8	2.93	38
Pacific Halibut	614	*Hippoglossus stenolepis*	1669.5	2.63	72
Sand Sole	636	*Psettichthys melanostictus*	836.3	1.32	38
Flathead Sole	612	*Hippoglossoides elassodon*	829.3	1.31	33
Petrale Sole	607	*Eopsetta jordani*	408.5	0.64	41
Butter Sole	619	*Isopsetta isolepis*	348.2	0.55	34
Starry Flounder	631	*Platichthys stellatus*	137.2	0.22	6
Slender Sole	625	*Lyopsetta exilis*	70.9	0.11	16
Curlfin Sole	635	*Pleuronichthys decurrens*	51.2	0.08	25
Speckled Sanddab	598	*Citharichthys stigmaeus*	1.3	0.00	9
Total Flatfish			39246.9	61.76	
Rockfish					
Quillback Rockfish	424	*Sebastes maliger*	94.8	0.15	14
Yellowtail Rockfish	418	*Sebastes flavidus*	66.8	0.11	15
Bocaccio	435	*Sebastes paucispinis*	28.7	0.05	4
Black Rockfish	426	*Sebastes melanops*	22.5	0.04	1
Copper Rockfish	407	*Sebastes caurinus*	17.5	0.03	5
Rougheye Rockfish	394	*Sebastes aleutianus*	13.9	0.02	1
Silvergray Rockfish	405	*Sebastes brevispinis*	12.7	0.02	4
Pacific Ocean Perch	396	*Sebastes alutus*	7.2	0.01	8
Canary Rockfish	437	*Sebastes pinniger*	5.1	0.01	3
Redbanded Rockfish	401	*Sebastes babcocki*	3.3	0.01	1
Shortspine Thornyhead	451	*Sebastolobus alascanus*	2.0	0.00	2
Redstripe Rockfish	439	*Sebastes proriger*	1.0	0.00	2
Greenstriped Rockfish	414	*Sebastes elongatus*	0.9	0.00	1
Tiger Rockfish	433	*Sebastes nigrocinctus*	0.5	0.00	1
Brown Rockfish	398	*Sebastes auriculatus*	0.0	0.00	1
Darkblotched Rockfish	410	*Sebastes crameri*	0.0	0.00	1
Total Rockfish			276.9	0.44	
Selachii					
Spotted Ratfish	066	*Hydrolagus colliei*	11831.7	18.62	90
Big Skate	056	*Raja binoculata*	2538.4	3.99	45
Spiny Dogfish	044	*Squalus acanthias*	385.8	0.61	41
Longnose Skate	059	*Raja rhina*	133.2	0.21	22
Sandpaper Skate	058	*Bathyraja interrupta*	14.3	0.02	5
Skates	051	Rajidae	10.7	0.02	1
Total Selachii			14914.1	23.47	
Roundfish					
Pacific Tomcod	226	*Microgadus proximus*	3322.3	5.23	61
Pacific Cod	222	*Gadus macrocephalus*	1250.6	1.97	80
Walleye Pollock	228	*Theragra chalcogramma*	644.7	1.01	46
Lingcod	467	*Ophiodon elongatus*	323.3	0.51	31

Table 6: Continued

Common Name	Species Code	Species latin name	Total Catch (kg)	Proportion of total catch (%)	Frequency Occurrence (N)
Sablefish	455	*Anoplopoma fimbria*	210.7	0.33	27
Pacific Herring	096	*Clupea pallasi*	176.3	0.28	62
Eulachon	148	*Thaleichthys pacificus*	151.6	0.24	21
Wolf Eel	351	*Anarrhichthys ocellatus*	40.7	0.06	8
Pacific Staghorn Sculpin	518	*Leptocottus armatus*	37.9	0.06	9
Kelp Greenling	461	*Hexagrammos decagrammus*	30.3	0.05	13
Pacific Sand Lance	361	*Ammodytes hexapterus*	25.7	0.04	27
Sturgeon Poacher	550	*Podothecus accipenserinus*	19.9	0.03	59
Shiner Perch	304	*Cymatogaster aggregata*	9.0	0.01	16
Wattled Eelpout	244	*Lycodes palearis*	3.4	0.01	3
Pacific Sandfish	316	*Trichodon trichodon*	1.7	0.00	4
Red Irish Lord	502	*Hemilepidotus hemilepidotus*	1.2	0.00	2
Pacific Hake	225	*Merluccius productus*	1.1	0.00	2
Eelpouts	231	Zoarcidae	0.9	0.00	5
Bigfin Eelpout	233	*Lycodes cortezianus*	0.8	0.00	7
Great Sculpin	521	*Myoxocephalus polyacanthocephalus*	0.8	0.00	2
Buffalo Sculpin	499	*Enophrys bison*	0.6	0.00	4
Chinook Salmon	124	*Oncorhynchus tshawytscha*	0.6	0.00	2
Roughback Sculpin	491	*Chitonotus pugetensis*	0.5	0.00	10
Brown Irish Lord	504	*Hemilepidotus spinosus*	0.2	0.00	3
Snake Prickleback	337	*Lumpenus sagitta*	0.1	0.00	8
Warty Poacher	562	*Occella verrucosa*	0.1	0.00	1
Northern Ronquil	319	*Ronquilus jordani*	0.1	0.00	4
Slim Sculpin	535	*Radulinus asprellus*	0.0	0.00	4
Rock Prickleback	343	*Xiphister mucosus*	0.0	0.00	1
Saddleback Gunnel	348	*Pholis ornata*	0.0	0.00	1
Total Roundfish			6255.0	9.84	
Invertebrates					
Dungeness Crab	XKG	*Cancer magister*	1201.0	1.89	27
Pink Short-Spined Star	4ZC	*Pisaster brevispinus*	528.6	0.83	47
Sunflower Starfish	4XE	*Pycnopodia helianthoides*	410.2	0.65	56
Anemone	3L0	Actiniaria	272.0	0.43	44
Giant Red Sea Cucumber	6OB	*Parastichopus californicus*	138.2	0.22	10
Sea Cucumber	6NA	Holothuroidea	65.4	0.10	12
Giant Pacific Octopus	98E	*Enteroctopus dofleini*	41.5	0.07	7
Barnacles	HCA	Cirripedia	24.9	0.04	1
Pagurus	VBB	Pagurus	23.2	0.04	31
Sidestripe Shrimp	SEE	*Pandalopsis dispar*	22.6	0.04	11
Giant Barnacle	HOE	*Balanus nubilis*	20.2	0.03	2
Pink scallop	67E	*Chlamys rubida*	11.7	0.02	12
Sand Star	4GD	*Luidia foliolata*	10.9	0.02	21
Scallop	67B	Pectinidae	8.5	0.01	1
Oregon triton	28I	*Fusitriton oregonensis*	7.6	0.01	13
Red Urchin	6BC	*Strongylocentrotus franciscanus*	7.5	0.01	2
Fragile Urchin	6AF	*Allocentrotus fragilis*	7.1	0.01	7
Sea Pens	3U0	Pennatulacea	5.7	0.01	17
Tube Worms	0FA	Sedentaria	5.4	0.01	3
Arminidae	54B	Arminidae	4.2	0.01	7
Long-Armed Sea Star	4YB	*Orthasterias koehleri*	3.2	0.01	5
Purple Sea Urchins	6BD	*Strongylocentrotus purpuratus*	3.1	0.00	3
Solasteridae	4TA	Solasteridae	2.9	0.00	4
Sponges	2A0	Porifera	2.7	0.00	3
Rock Snails	31E	Muricidae	2.4	0.00	5
Pink Shrimp (Smooth)	SDB	*Pandalus jordani*	2.3	0.00	5

Table 6: Continued

Common Name	Species Code	Species latin name	Total Catch (kg)	Proportion of total catch (%)	Frequency Occurrence (N)
Graceful Rock Crab	XKE	*Cancer gracilis*	2.3	0.00	3
Opalescent Inshore Squid	92D	*Loligo opalescens*	2.0	0.00	12
Leather Star	4OC	*Dermasterias imbricata*	1.8	0.00	8
Spiny Red Sea Star	4JF	*Hippasteria spinosa*	1.8	0.00	4
Jellyfish	3G0	Scyphozoa	1.7	0.00	18
Fish-Eating Star	4XF	*Stylasterias forreri*	1.3	0.00	6
Vermillion Starfish	4JD	*Mediaster aequalis*	1.3	0.00	8
Starfish	4GA	Asteriodea	1.2	0.00	1
Basket Stars	5QA	Euryalae	1.2	0.00	4
Red Rock Crab	XLA	*Cancer productus*	1.2	0.00	2
Furrowed Rock Crab	XKC	*Cancer branneri*	1.0	0.00	7
Spiny Scallop	67C	*Chlamys hastata*	1.0	0.00	4
Green False-Jingle	68H	*Pododesmus macrochisma*	1.0	0.00	2
Cushion Star	4UH	*Pteraster tesselatus*	0.9	0.00	2
Graceful Decorator Crab	ZCA	*Oregonia gracilis*	0.9	0.00	7
Bivalve Molluscs	60A	Bivalvia	0.5	0.00	4
Pink Shrimp	SCD	*Pandalus borealis*	0.5	0.00	4
Glass Sponges	2I0	*Hexactinellida*	0.3	0.00	1
Giant Star	4ZB	*Pisaster giganteus*	0.3	0.00	3
Lewismoon Snail	27F	*Polinices lewisii*	0.2	0.00	1
Green Urchin	6BB	*Strongylocentrotus droebachiensis*	0.2	0.00	1
Morning Sun Starfish	4TB	*Solaster dawsoni*	0.1	0.00	2
Doridídae	51F	Doridídae	0.1	0.00	2
Asteriidae	4WB	Asteriidae	0.1	0.00	2
Ascidians And Tunicates	8AB	Ascidiacea	0.1	0.00	7
Gastropods	10A	Gastropoda	0.1	0.00	3
Weathervane Scallop	68A	*Patinopecten caurinus*	0.0	0.00	1
Buccinidae	33G	Buccinidae	0.0	0.00	3
Rose Starfish	4TG	*Crossaster papposus*	0.0	0.00	5
Macoma	77C	Macoma	0.0	0.00	1
Bryozoa	3AA	Bryozoa	0.0	0.00	4
Blood Star	4RA	*Henricia leviuscula*	0.0	0.00	4
Phrynophiurida	5AB	Phrynophiurida	0.0	0.00	3
Oregoniinae	ZAC	Oregoniinae	0.0	0.00	3
Onchidoridídae	52G	Onchidoridídae	0.0	0.00	2
Bluespot Shrimp	SDH	*Pandalus stenolepis*	0.0	0.00	2
Crangons	SIA	Crangon	0.0	0.00	2
Aphroditidae	0AD	Aphroditidae	0.0	0.00	1
Anthozoa	3J0	Anthozoa	0.0	0.00	1
Cheiraster Dawsoni	4HF	*Cheiraster dawsoni*	0.0	0.00	1
Striped Sun Starfish	4TC	*Solaster stimpsoni*	0.0	0.00	1
Squids	92A	Teuthoidea	0.0	0.00	1
Heptacarpus	SUA	Heptacarpus	0.0	0.00	1
Rhinoceros Crab	VPG	*Rhinolithodes wosnessenskii*	0.0	0.00	1
Flattop Crab	VTG	*Petrolisthes eriomerus*	0.0	0.00	1
Pygmy Rock Crab	XKI	*Cancer oregonensis*	0.0	0.00	1
Pacific Lyre Crab	ZBA	*Hyas lyratus*	0.0	0.00	1
Northern Kelp Crab	ZDF	*Pugettia producta*	0.0	0.00	1
Total Invertebrates			2855.8	4.49	
Total Catch All Species			63548.7		

Table 7: Summary of catch (kg) by depth strata for selected species. Depth zones include depths from the lower limit up to but not including the upper limit.

Species	Species Code	Depth Zones (meters)									Total Catch
		18-36	36-54	54-72	72-90	90-108	108-126	126-144	144-162	162-180	kg
English sole	628	1513.6	2215.6	3531.1	2788.4	824.9	108.7	0.5	0.0	65.2	**11048.0**
Dover sole	626	1.0	180.1	340.1	1079.9	1768.8	625.6	472.6	0.0	170.5	**4644.7**
Rock sole	621	1664.2	1269.2	407.3	123.3	8.7	2.1	1.0	0.0	1.6	**4538.4**
Arrowtooth flounder	602	0.0	178.6	355.2	1926.6	2249.6	3550.2	1353.8	0.0	125.8	**9743.3**
Petrale sole	607	0.0	10.5	151.1	222.2	23.1	5.6	3.4	0.0	0.0	**415.9**
Rex sole	610	0.0	43.0	1106.8	1194.9	1415.0	302.0	400.4	0.0	74.0	**4538.4**
Lingcod	467	1.2	120.5	13.7	46.3	52.5	80.8	12.7	0.0	0.0	**327.7**
Pacific cod	222	155.3	105.6	216.6	258.9	286.2	212.6	20.5	0.0	9.0	**1264.7**
Total		**3335.2**	**4123.2**	**6121.9**	**7640.6**	**6628.6**	**4887.6**	**2264.9**	**0.0**	**446.1**	**36521.0**

Table 8: Summary of catch by set for selected species during the Hecate Strait multi-species bottom trawl survey, May 19 to June 7, 2003..

Set	Fishing Ground	Start Depth (m)	End Depth (m)	Mean Depth (fms)	Total catch (kg)	Effort (h)	Southern Rock sole Catch (kg)	Southern Rock sole CPUE (kg/hr)	English sole Catch (kg)	English sole CPUE (kg/hr)	Dover sole Catch (kg)	Dover sole CPUE (kg/hr)	Petrale sole Catch (kg)	Petrale sole CPUE (kg/hr)	Arrowtooth flounder Catch (kg)	Arrowtooth flounder CPUE (kg/hr)	Rex sole Catch (kg)	Rex sole CPUE (kg/hr)	Lingcod Catch (kg)	Lingcod CPUE (kg/hr)	Pacific cod Catch (kg)	Pacific cod CPUE (kg/hr)
1	White Rocks	42	43	23	225.50	0.57	106.0	187.1	5.0	8.8	0.3	0.5	2.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	White Rocks	57	58	31	573.50	0.50	9.8	19.6	54.0	108.0	25.7	51.4	34.4	68.8	0.0	0.0	12.8	25.6	0.2	0.4	3.0	6.0
3	White Rocks	64	84	40	415.67	0.57	0.3	0.5	109.0	192.4	16.2	28.6	5.8	10.2	84.4	148.9	36.2	63.9	0.0	0.0	6.8	12.0
4	White Rocks	95	95	52	421.49	0.52	0.0	0.0	2.3	4.5	99.8	193.2	1.1	2.1	25.1	48.6	33.2	64.3	0.0	0.0	1.0	1.9
5	White Rocks	112	113	62	434.70	0.57	0.2	0.4	0.0	0.0	58.4	103.1	0.0	0.0	88.9	156.9	28.6	50.5	0.0	0.0	11.4	20.1
6	White Rocks	128	125	69	734.00	0.53	0.4	0.8	0.5	0.9	202.6	379.9	2.0	3.8	328.3	615.6	59.2	111.0	6.9	12.9	4.5	8.4
7	White Rocks	64	68	36	204.96	0.68	24.1	35.3	6.4	9.4	1.4	2.0	0.2	0.3	2.2	3.2	0.1	0.1	0.6	0.9	5.5	8.0
8	Oval Hill	83	85	46	343.40	0.52	5.2	10.1	99.6	192.8	30.3	58.6	0.3	0.6	69.7	134.9	30.0	58.1	0.0	0.0	4.2	8.1
9	Venus	50	51	28	231.80	0.50	23.7	47.4	7.0	14.0	0.7	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3	8.6
10	Oval Hill	57	68	34	227.63	0.50	23.8	47.6	56.3	112.6	3.0	6.0	2.7	5.4	3.3	6.6	18.8	37.6	0.0	0.0	1.3	2.6
11	Oval Hill	76	76	42	702.45	0.52	6.7	13.0	108.0	209.0	18.7	36.2	0.0	0.0	79.3	153.5	36.7	71.0	0.0	0.0	17.8	34.5
12	Fingers	38	44	22	206.21	0.50	27.7	55.4	106.8	213.6	0.0	0.0	0.0	0.0	3.9	7.8	0.9	1.8	0.0	0.0	1.2	2.4
13	Butterworth	65	66	36	1992.70	0.50	8.1	16.2	865.6	1731.2	190.6	381.3	8.1	16.2	54.4	108.7	216.6	433.2	0.0	0.0	21.9	43.8
14	Butterworth	100	95	53	2041.20	0.50	0.0	0.0	290.2	580.4	361.5	723.1	2.1	4.2	338.0	675.9	266.7	533.3	0.0	0.0	2.6	5.2
15	Butterworth	83	80	45	2500.00	0.50	11.9	23.8	629.1	1258.2	303.6	607.1	5.6	11.2	193.2	386.4	655.4	1310.9	0.0	0.0	15.8	31.6
16	Dundas	51	53	28	280.21	0.50	73.5	147.0	55.2	110.4	1.7	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	37.5	75.0
17	Butterworth	60	66	34	2412.30	0.48	54.5	112.8	1880.7	3891.1	3.2	6.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	116.3	240.6
18	Butterworth	29	23	14	392.27	0.37	16.6	45.3	90.3	246.3	0.4	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	54.5
19	Butterworth	28	24	14	1229.31	0.50	110.4	220.8	759.0	1518.0	0.2	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.1	80.2
20	Butterworth	95	97	52	367.70	0.50	5.8	11.6	120.3	240.6	8.0	16.0	0.0	0.0	6.7	13.4	3.1	6.2	5.1	10.2	38.8	77.6
21	Butterworth	183	185	101	1128.15	0.33	1.6	4.8	65.2	195.6	170.5	511.5	0.0	0.0	125.8	377.4	74.0	222.0	0.0	0.0	9.0	27.0
22	Butterworth	107	119	62	5896.80	0.52	0.0	0.0	13.9	26.9	149.3	289.0	0.0	0.0	1163.3	2251.6	20.8	40.3	52.8	102.2	159.9	309.5
23	Two Peaks	85	88	47	1360.00	0.25	0.0	0.0	161.3	645.2	86.0	343.9	0.0	0.0	101.0	403.9	54.4	217.7	3.5	14.0	11.8	47.2
24	Two Peaks	66	64	36	205.80	0.25	0.0	0.0	30.9	123.6	9.7	38.8	0.0	0.0	40.3	161.2	17.7	70.8	0.0	0.0	11.0	44.0
25	Two Peaks	104	112	59	370.60	0.25	0.8	3.2	24.3	97.2	64.9	259.6	0.8	3.2	112.8	451.2	12.3	49.2	0.0	0.0	14.4	57.6
26	Dundas	117	122	65	525.00	0.25	0.0	0.0	33.7	134.8	82.2	328.8	1.9	7.6	139.9	559.6	18.6	74.4	5.1	20.4	6.7	26.8
27	S Of Barren Island	137	133	74	673.50	0.25	0.0	0.0	0.0	0.0	152.8	611.2	0.0	0.0	181.2	724.8	226.5	906.0	0.0	0.0	7.0	28.0
28	Dundas	124	124	68	351.72	0.33	0.0	0.0	0.0	0.0	35.5	106.5	0.0	0.0	252.3	756.9	12.5	37.5	0.0	0.0	0.0	0.0

Table 8: Continued

Set	Fishing Ground	Start Depth (m)	End Depth (m)	Mean Depth (fms)	Total catch (kg)	Effort (h)	Southern Rock sole Catch (kg)	Southern Rock sole CPUE (kg/hr)	English sole Catch (kg)	English sole CPUE (kg/hr)	Dover sole Catch (kg)	Dover sole CPUE (kg/hr)	Petrale sole Catch (kg)	Petrale sole CPUE (kg/hr)	Arrowtooth flounder Catch (kg)	Arrowtooth flounder CPUE (kg/hr)	Rex sole Catch (kg)	Rex sole CPUE (kg/hr)	Lingcod Catch (kg)	Lingcod CPUE (kg/hr)	Pacific cod Catch (kg)	Pacific cod CPUE (kg/hr)
29	Two Peaks	139	133	74	402.30	0.35	0.0	0.0	0.0	0.0	38.4	109.7	0.0	0.0	234.5	670.0	14.9	42.6	0.0	0.0	0.0	0.0
30	Mcintyre Bay	120	123	66	1303.40	0.33	0.0	0.0	2.4	7.2	26.5	79.5	0.0	0.0	1224.8	3674.4	12.4	37.2	0.0	0.0	1.8	5.4
31	Mcintyre Bay	38	59	27	238.10	0.50	1.4	2.8	7.2	14.4	0.0	0.0	8.2	16.4	22.0	44.0	2.3	4.6	4.2	8.4	14.6	29.2
32	Butterworth	86	93	49	1116.54	0.52	0.0	0.0	35.4	68.5	151.7	293.6	3.0	5.8	625.0	1209.7	83.4	161.4	10.3	19.9	8.4	16.3
33	Mcintyre Bay	131	136	73	512.01	0.33	0.0	0.0	0.0	0.0	46.4	139.2	0.3	0.9	387.9	1163.7	26.7	80.1	3.4	10.2	4.5	13.5
34	Two Peaks	67	64	36	6.91	0.33	0.0	0.0	0.0	0.0	6.1	18.2	0.0	0.0	0.4	1.3	0.0	0.0	0.0	0.0	0.0	0.0
35	Two Peaks	99	107	56	202.85	0.50	0.2	0.3	3.7	7.4	1.5	3.0	0.0	0.0	162.3	324.6	4.3	8.6	0.0	0.0	1.1	2.2
36	Two Peaks	121	122	66	201.24	0.48	0.0	0.0	0.0	0.0	15.1	31.2	0.0	0.0	132.6	274.3	4.3	8.9	17.7	36.6	1.6	3.3
37	Two Peaks	146	135	77	419.10	0.50	0.6	1.2	0.0	0.0	8.4	16.8	1.1	2.2	206.4	412.8	12.8	25.6	2.4	4.8	2.2	4.4
38	Two Peaks	87	77	45	776.79	0.20	0.0	0.0	137.8	689.0	2.7	13.5	0.6	3.0	517.2	2586.0	6.3	31.5	15.5	77.5	20.5	102.5
39	Two Peaks	79	123	55	222.60	0.28	0.7	2.5	3.8	13.4	0.9	3.2	0.0	0.0	166.4	587.3	10.1	35.6	0.0	0.0	1.5	5.3
40	Two Peaks	101	145	67	229.60	0.35	0.0	0.0	6.2	17.7	29.7	84.9	0.0	0.0	124.9	356.9	26.5	75.7	0.0	0.0	0.0	0.0
41	West Two Peaks	54	51	29	1031.80	0.52	0.0	0.0	60.1	116.3	7.1	13.7	0.0	0.0	147.9	286.3	5.5	10.6	24.5	47.4	0.0	0.0
42	Two Peaks	66	90	43	912.90	0.50	0.0	0.0	198.2	396.4	8.5	17.0	0.0	0.0	152.6	305.2	8.0	16.0	10.6	21.2	73.8	147.6
43	Two Peaks	98	95	53	1394.20	0.50	0.0	0.0	137.3	274.6	70.8	141.6	1.4	2.8	826.0	1652.0	73.4	146.8	15.8	31.6	13.5	27.0
44	Two Peaks	60	61	33	847.12	0.50	0.0	0.0	241.3	482.6	0.0	0.0	0.0	0.0	208.8	417.6	0.0	0.0	5.3	10.6	18.6	37.2
45	Two Peaks	40	50	25	336.80	0.50	12.2	24.4	3.3	6.6	0.0	0.0	0.0	0.0	2.2	4.4	0.0	0.0	88.5	177.0	3.0	6.0
46	West Two Peaks	83	106	52	821.96	0.52	0.0	0.0	38.8	75.1	105.2	203.6	1.4	2.7	310.7	601.4	13.7	26.5	12.4	24.0	19.1	37.0
47	Mcintyre Bay	120	116	65	386.00	0.50	1.1	2.2	1.6	3.2	62.0	124.0	1.4	2.8	173.3	346.6	41.8	83.6	0.0	0.0	11.7	23.4
48	Two Peaks	35	29	17	62.30	0.50	3.3	6.6	2.2	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	6.6
49	Butterworth	57	59	32	1741.50	0.33	0.6	1.8	128.5	385.5	103.6	310.8	1.0	3.0	41.1	123.3	840.0	2520.0	6.1	18.3	21.5	64.5
50	Butterworth	82	86	46	1203.34	0.27	0.0	0.0	245.6	921.2	380.5	1427.0	0.0	0.0	21.2	79.5	195.0	731.2	2.2	8.4	20.7	77.6
51	Butterworth	28	28	15	1100.00	0.48	32.3	66.7	44.3	91.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.1	12.6
52	Butterworth	28	25	14	1161.40	0.48	102.9	212.9	553.1	1144.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.5	15.5
53	Fingers	33	35	19	213.14	0.27	61.9	232.1	27.5	103.1	0.4	1.5	0.0	0.0	0.0	0.0	0.0	0.0	1.2	4.5	1.8	6.8
54	Unnamed	26	23	13	348.03	0.52	91.0	176.1	2.9	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.5
55	Unnamed	35	34	19	405.36	0.52	0.0	0.0	18.5	35.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.8
56	Sw Seal Rocks	42	43	23	2268.00	0.50	549.2	1098.3	724.8	1449.6	53.2	106.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	39.4	78.8
57	Sw Seal Rocks	44	46	25	2722.00	0.33	10.4	31.2	1234.0	3702.1	117.2	351.5	0.0	0.0	2.6	7.8	0.0	0.0	0.0	0.0	4.5	13.5
58	Shell Ground	61	55	32	197.90	0.25	39.1	156.4	25.8	103.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.4	25.6

Table 8: Continued

Set	Fishing Ground	Start Depth (m)	End Depth (m)	Mean Depth (fms)	Total catch (kg)	Effort (h)	Southern Rock sole Catch (kg)	Southern Rock sole CPUE (kg/hr)	English sole Catch (kg)	English sole CPUE (kg/hr)	Dover sole Catch (kg)	Dover sole CPUE (kg/hr)	Petrale sole Catch (kg)	Petrale sole CPUE (kg/hr)	Arrowtooth flounder Catch (kg)	Arrowtooth flounder CPUE (kg/hr)	Rex sole Catch (kg)	Rex sole CPUE (kg/hr)	Lingcod Catch (kg)	Lingcod CPUE (kg/hr)	Pacific cod Catch (kg)	Pacific cod CPUE (kg/hr)
59	Unnamed	25	25	14	399.70	0.33	247.7	743.1	7.9	23.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.5
60	White Rocks	95	100	53	1231.83	0.50	1.5	3.0	23.8	47.6	308.6	617.2	4.2	8.4	74.5	149.0	360.4	720.8	0.0	0.0	3.3	6.6
61	White Rocks	107	104	58	894.45	0.33	0.5	1.5	5.1	15.3	398.3	1194.9	1.8	5.4	82.8	248.4	169.5	508.5	4.5	13.5	5.5	16.5
62	White Rocks	45	47	25	179.45	0.33	20.5	61.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
63	White Rocks	76	59	37	908.41	0.35	57.8	165.1	57.0	162.9	0.0	0.0	100.2	286.3	3.9	11.1	0.0	0.0	0.0	0.0	3.0	8.6
64	White Rocks	82	78	44	961.00	0.33	0.5	1.4	314.5	943.6	0.5	1.4	111.5	334.5	37.6	112.7	0.9	2.8	0.0	0.0	20.8	62.4
65	White Rocks	50	50	27	194.92	0.33	24.2	72.6	4.9	14.7	0.0	0.0	0.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
66	White Rocks	101	102	56	926.50	0.33	0.0	0.0	42.2	126.5	75.7	227.1	4.0	12.0	135.5	406.4	187.0	561.1	0.0	0.0	190.1	570.3
67	Unnamed	43	43	24	420.80	0.33	1.8	5.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	34.3	102.9	0.4	1.2	0.0	0.0
68	White Rocks	57	60	32	241.60	0.33	93.8	281.4	0.0	0.0	0.6	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.8	6.4	19.2
69	White Rocks	83	85	46	648.30	0.38	1.4	3.6	153.7	400.9	54.1	141.1	18.7	48.8	33.4	87.2	46.3	120.9	0.0	0.0	34.9	91.0
70	Bonilla	99	99	54	351.04	0.53	0.0	0.0	55.3	103.7	88.1	165.2	1.7	3.2	74.8	140.3	96.5	180.9	0.0	0.0	1.5	2.8
71	Bonilla	115	112	62	321.40	0.50	0.0	0.0	23.1	46.2	85.8	171.6	1.5	3.0	122.4	244.8	30.9	61.8	5.2	10.4	1.4	2.8
72	South Bonilla	95	98	53	587.24	0.50	0.0	0.0	64.5	129.0	219.2	438.4	1.0	2.0	42.2	84.4	165.3	330.6	10.2	20.4	7.2	14.4
73	South Bonilla	79	81	44	388.60	0.50	1.3	2.6	125.6	251.2	13.1	26.2	28.4	56.8	1.4	2.8	20.3	40.6	2.8	5.6	0.9	1.8
74	Ole Spot	50	50	27	844.35	0.50	78.2	156.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.6	0.0	0.0
75	Unnamed	31	30	17	472.85	0.50	286.5	573.0	3.8	7.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.0	32.0
76	Unnamed	49	42	25	183.53	0.52	70.6	136.6	0.2	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	2.2
77	Unnamed	26	28	15	208.83	0.43	79.3	183.0	1.4	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.8
78	Ole Spot	25	27	14	40.64	0.10	4.1	40.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
79	Ole Spot	38	38	21	280.75	0.50	147.7	295.4	4.7	9.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80	Ole Spot	35	32	18	153.80	0.52	87.2	168.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81	Ole Spot	63	62	34	379.20	0.33	2.1	6.3	0.5	1.5	0.0	0.0	1.6	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82	South Bonilla	77	75	42	162.68	0.33	0.6	1.8	57.5	172.5	0.2	0.5	1.2	3.6	10.5	31.5	0.8	2.4	0.0	0.0	3.6	10.8
83	South Bonilla	67	70	37	191.46	0.33	2.4	7.1	152.6	457.8	1.9	5.6	0.0	0.0	0.3	0.9	0.0	0.0	0.0	0.0	0.6	1.8
84	South Bonilla	95	98	53	172.47	0.33	0.0	0.0	32.4	97.2	31.0	93.0	4.0	12.0	2.3	6.9	29.0	87.0	1.6	4.8	0.7	2.1
85	South Bonilla	135	139	75	137.71	0.33	0.0	0.0	0.0	0.0	24.0	72.0	0.0	0.0	15.5	46.5	60.3	180.9	0.0	0.0	2.3	6.9
86	Unnamed	120	117	65	146.35	0.35	0.0	0.0	2.1	6.0	16.2	46.3	0.0	0.0	10.5	30.0	76.5	218.6	0.0	0.0	3.1	8.9
87	Unnamed	85	82	46	328.98	0.33	0.0	0.0	97.0	291.0	10.1	30.3	13.9	41.7	0.0	0.0	17.0	51.0	1.4	4.2	0.0	0.0
88	Ole Spot	58	58	32	234.06	0.33	9.1	27.3	30.5	91.5	0.4	1.2	0.5	1.5	0.9	2.7	0.8	2.4	0.0	0.0	0.6	1.8

Table 8: Continued

Set	Fishing Ground	Start Depth (m)	End Depth (m)	Mean Depth (fms)	Total catch (kg)	Effort (h)	Southern Rock sole Catch (kg)	Southern Rock sole CPUE (kg/hr)	English sole Catch (kg)	English sole CPUE (kg/hr)	Dover sole Catch (kg)	Dover sole CPUE (kg/hr)	Petrale sole Catch (kg)	Petrale sole CPUE (kg/hr)	Arrowtooth flounder Catch (kg)	Arrowtooth flounder CPUE (kg/hr)	Rex sole Catch (kg)	Rex sole CPUE (kg/hr)	Lingcod Catch (kg)	Lingcod CPUE (kg/hr)	Pacific cod Catch (kg)	Pacific cod CPUE (kg/hr)
89	Ole Spot	51	52	28	188.74	0.17	13.9	83.4	2.4	14.4	0.0	0.0	0.1	0.6	0.0	0.0	0.0	0.0	2.6	15.6	0.0	0.0
90	East Horseshoe	101	98	54	13.14	0.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	9.3	2.2	6.7	0.0	0.0	0.0	0.0
91	West Horseshoe	75	77	42	1.60	0.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92	East Horseshoe	61	57	32	18.10	0.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93	East Horseshoe	78	77	42	481.70	0.33	89.4	268.2	18.4	55.2	0.2	0.6	33.2	99.6	0.2	0.6	3.0	9.0	0.0	0.0	8.8	26.4
94	Cumshewa/Reef Is. Flats	27	26	14	166.60	0.33	147.9	443.7	2.2	6.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.6
95	Cumshewa/Reef Is. Flats	29	26	15	182.90	0.33	160.3	480.9	0.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
96	Ole Spot	35	35	19	327.88	0.50	236.9	473.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	57.8	115.6
97	Reef Island	84	71	42	714.52	0.50	6.0	12.0	297.7	595.4	3.6	7.2	0.0	0.0	0.0	0.0	1.1	2.2	0.0	0.0	10.1	20.2
98	Unnamed	67	66	36	187.60	0.50	38.2	76.4	0.0	0.0	0.0	0.0	1.2	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.0
99	Unnamed	52	50	28	154.10	0.48	108.2	223.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100	Unnamed	66	64	36	82.96	0.43	43.9	101.3	1.0	2.3	0.0	0.0	1.2	2.8	0.0	0.0	0.0	0.0	0.9	2.0	0.0	0.0
101	Unnamed	115	114	63	36.62	0.53	0.0	0.0	1.4	2.6	0.0	0.0	0.0	0.0	4.5	8.4	16.8	31.5	0.0	0.0	0.6	1.1
102	Unnamed	102	102	56	30.30	0.33	0.0	0.0	5.2	15.6	0.1	0.3	0.4	1.1	2.3	7.0	2.8	8.4	2.9	8.8	0.3	0.8

Table 9: Summary of biological data collected by species for all samples taken during the 2003 Hecate Strait multi-species bottom trawl survey.

No.	Species Code	Common Name	Scientific Name	Specimens Recorded				Ageing Structures Collected		
				Length	Weight	Sex	Maturity	Otoliths	Dorsal Fins Rays	Vertebrae
		Flatfish								
1	628	English Sole	*Parophrys vetulus*	7495	740	7495	740	740	0	0
2	621	Southern Rock Sole	*Lepidopsetta bilineata*	5351	400	5263	400	400	0	0
3	626	Dover Sole	*Microstomus pacificus*	4375	675	4370	670	675	0	0
4	610	Rex Sole	*Glyptocephalus zachirus*	4226	100	4226	100	100	0	0
5	602	Arrowtooth Flounder	*Atheresthes stomias*	3334	175	3331	175	175	0	0
6	596	Pacific Sanddab	*Citharichthys sordidus*	1715	100	1715	100	100	0	0
7	612	Flathead Sole	*Hippoglossoides elassodon*	1363	72	1363	72	72	0	0
8	619	Butter Sole	*Isopsetta isolepis*	1124	87	1124	87	87	0	0
9	636	Sand Sole	*Psettichthys melanostictus*	891	25	891	25	25	0	0
10	607	Petrale Sole	*Eopsetta jordani*	471	470	471	471	471	0	0
11	614	Pacific Halibut	*Hippoglossus stenolepis*	434	0	413	0		0	0
12	625	Slender Sole	*Eopsetta exilis*	376	0	376	0	0	0	0
13	635	Curlfin Sole	*Pleuronichthys decurrens*	62	13	62	13	13	0	0
		Selachii								
1	66	Spotted Ratfish	*Hydrolagus colliei*	3956	0	3956	0	0	0	0
2	56	Big Skate	*Raja binoculata*	442	407	442	442	0	0	420
3	59	Longnose Skate	*Raja rhina*	52	50	52	52	0	0	50
4	44	Spiny Dogfish	*Squalus acanthias*	22	0	22	0	0	0	0
5	58	Sandpaper Skate	*Bathyraja interrupta*	6	6	6	6	0	0	6
		Roundfish								
1	222	Pacific Cod	*Gadus macrocephalus*	1873	1873	1873	1873	0	0	0
2	226	Pacific Tomcod	*Microgadus proximus*	1423	50	319	45	50	0	0
3	228	Walleye Pollock	*Theragra chalcogramma*	720	0	469	0	0	0	0
4	455	Sablefish	*Anoplopoma fimbria*	453	319	453	320	319	0	0
5	461	Kelp Greenling	*Hexagrammos decagrammus*	82	0	82	0	0	0	0
6	467	Lingcod	*Ophiodon elongatus*	80	80	80	80	0	80	0
		Total		**40325**	**5642**	**38862**	**5671**	**3227**	**80**	**476**

Table 10: Summary of numbers of specimens collected from different depth zones.

Species	Sex	Depth Zones (meters)									
		18-36	36-54	54-72	72-90	90-108	108-126	126-144	144-162	162-180	Total
English sole	Male	392	488	1096	977	220	27	0	0	7	3207
	Female	600	595	1098	1209	447	122	0	0	40	4111
Dover sole	Male	0	0	401	582	481	330	149	0	20	1963
	Female	0	0	439	594	609	438	249	0	78	2407
Southern rock sole	Male	922	885	454	63	0	0	0	0	0	2324
	Female	1196	1056	563	124	0	0	0	0	0	2939
Arrowtooth flounder	Male	0	0	54	326	169	395	217	0	3	1164
	Female	0	0	63	752	484	499	229	0	59	2086
Petrale sole	Male	0	1	54	52	8	5	0	0	0	120
	Female	0	13	138	159	22	3	4	0	0	339
Rex sole	Male	0	0	123	184	337	311	234	0	3	1192
	Female	0	0	525	544	845	581	485	0	54	3034
Lingcod	Male	0	5	5	8	2	3	2	0	0	25
	Female	0	21	4	9	13	7	1	0	0	55
Pacific cod	Male	223	163	263	154	72	50	13	0	5	943
	Female	231	142	271	158	66	52	4	0	2	926
Grand Total		3564	3369	5551	5895	3775	2823	1587		271	26835

Table 11. Summary statistics by species and sex for length (mm) and weight (g) from samples collected.

Species	Sex	Weight (g)							Length (mm)						
		N	Min	Max	Mean	Standard Deviation	Median	Mode	N	Min	Max	Mean	Standard Deviation	Median	Mode
English sole	Male	316	62	540	213	81	200	252	3287	110	410	240	59	240	200
	Female	414	85	1026	392	195	370	260	4208	100	530	289	80	290	210
Dover sole	Male	222	40	646	245	93	236	234	1962	150	450	272	48	270	240
	Female	436	45	2496	508	380	411	135	2412	130	680	320	88	305	250
Southern	Male	135	68	501	202	83	143	130	2412	22	410	218	54	210	180
Rock sole	Female	255	53	1757	414	334	327	96	2939	90	540	257	334	230	180
Arrowtooth	Male	43	87	1351	670	307	658	-	1187	110	680	312	116	290	220
Flounder	Female	130	191	3592	1378	590	1405	361	2147	120	880	426	154	490	560
Petrale sole	Male	125	67	1707	441	230	391	304	125	190	522	333	45	328	328
	Female	341	97	3052	871	540	707	97	341	200	616	402	81	388	355
Rex sole	Male	44	115	349	200	58	194	144	1192	150	460	261	45	260	260
	Female	53	121	570	324	105	316	196	3034	160	558	298	53	290	270
Pacific Cod	Male	939	18	5448	533	779	217	102	939	116	794	324	125	280	225
	Female	920	35	8320	684	1090	229	182	920	164	868	342	144	286	235
Lingcod	Male	24	230	6050	2728	1589	2445		24	312	833	622	135	627	625
	Female	54	291	18940	4618	3874	3554		54	342	1209	728	175	714	657

Table 12: Length-weight regression parameters by species and sex. N is sample size, R^2 is the regression coefficient.

Species	Sex	N	R^2	a Estimate	b Estimate
English sole	Males	315	0.94350	0.000004	3.1327
	Females	413	0.96920	0.000002	3.2962
Dover sole	Males	222	0.95570	0.000003	3.1848
	Females	436	0.97230	0.000003	3.1702
Southern rock sole	Males	134	0.96530	0.000008	3.0642
	Females	255	0.94652	0.000003	3.2304
Arrowtooth flounder	Males	43	0.98460	0.000020	2.8405
	Females	127	0.96220	0.000020	2.8961
Petrale sole	Males	125	0.96480	0.000002	3.2612
	Females	341	0.99480	0.000010	3.0223
Rex sole	Males	44	0.92900	0.000001	3.2717
	Females	53	0.93600	0.000001	3.3782
Lingcod	Males	24	0.99230	0.000001	3.3443
	Females	54	0.98210	0.000001	3.3149
Pacific cod	Males	939	0.96920	0.000005	3.1176
	Females	920	0.98210	0.000005	3.1082

Table 13: Maturity stage for species sampled during the Hecate Strait multi-species bottom trawl survey, May 19 to June 7, 2003.

		Male								Female							
Maturity stage		Immature	Maturing	Developing	Running Ripe	Spawning	Spent	Resting	Total Males	Immature	Maturing	Developing	Running Ripe	Spawning	Spent	Resting	Total Females
Maturity Code		1	2	3	4	5	6	7		1	2	3	4	5	6	7	
English sole	n	14	13	5	0	27	125	117	301	28	63	27	0	0	8	263	389
	%	4.7	4.3	1.7	0.0	9.0	41.5	38.9	100.0	7.2	16.2	6.9	0.0	0.0	2.1	67.6	100.0
Dover sole	n	11	31	4	1	22	85	74	228	51	150	3	0	0	12	225	441
	%	4.8	13.6	1.8	0.4	9.6	37.3	32.5	100.0	11.6	34.0	0.7	0.0	0.0	2.7	51.0	100.0
Rock sole	n	61	41	4	2	22	2	10	142	89	62	55	5	1	0	46	258
	%	43.0	28.9	2.8	1.4	15.5	1.4	7.0	100.0	34.5	24.0	21.3	1.9	0.4	0.0	17.8	100.0
Arrowtooth	n	3	4	7	0	0	0	31	45	6	4	0	0	0	0	120	130
flounder	%	6.7	8.9	15.6	0.0	0.0	0.0	68.9	100.0	4.6	3.1	0.0	0.0	0.0	0.0	92.3	100.0
Petrale sole	n	24	24	3	0	2	1	66	120	105	81	4	0	0	0	149	339
	%	20.0	20.0	2.5	0.0	1.7	0.8	55.0	100.0	31.0	23.9	1.2	0.0	0.0	0.0	44.0	100.0
Rex sole	n	3	10	4	0	0	1	27	45	3	6	3	3	2	0	38	55
	%	6.7	22.2	8.9	0.0	0.0	2.2	60.0	100.0	5.5	10.9	5.5	5.5	3.6	0.0	69.1	100.0
Pacific cod	n	812	17	0	1	0	4	109	943	776	41	0	0	0	0	109	926
	%	86.1	1.8	0.0	0.1	0.0	0.4	11.6	100.0	83.8	4.4	0.0	0.0	0.0	0.0	11.8	100.0
Lingcod	n	8	0	0	0	0	1	16	25	13	29	7	0	0	3	3	55
	%	32.0	0.0	0.0	0.0	0.0	4.0	64.0	100.0	23.6	52.7	12.7	0.0	0.0	5.5	5.5	100.0

Figures

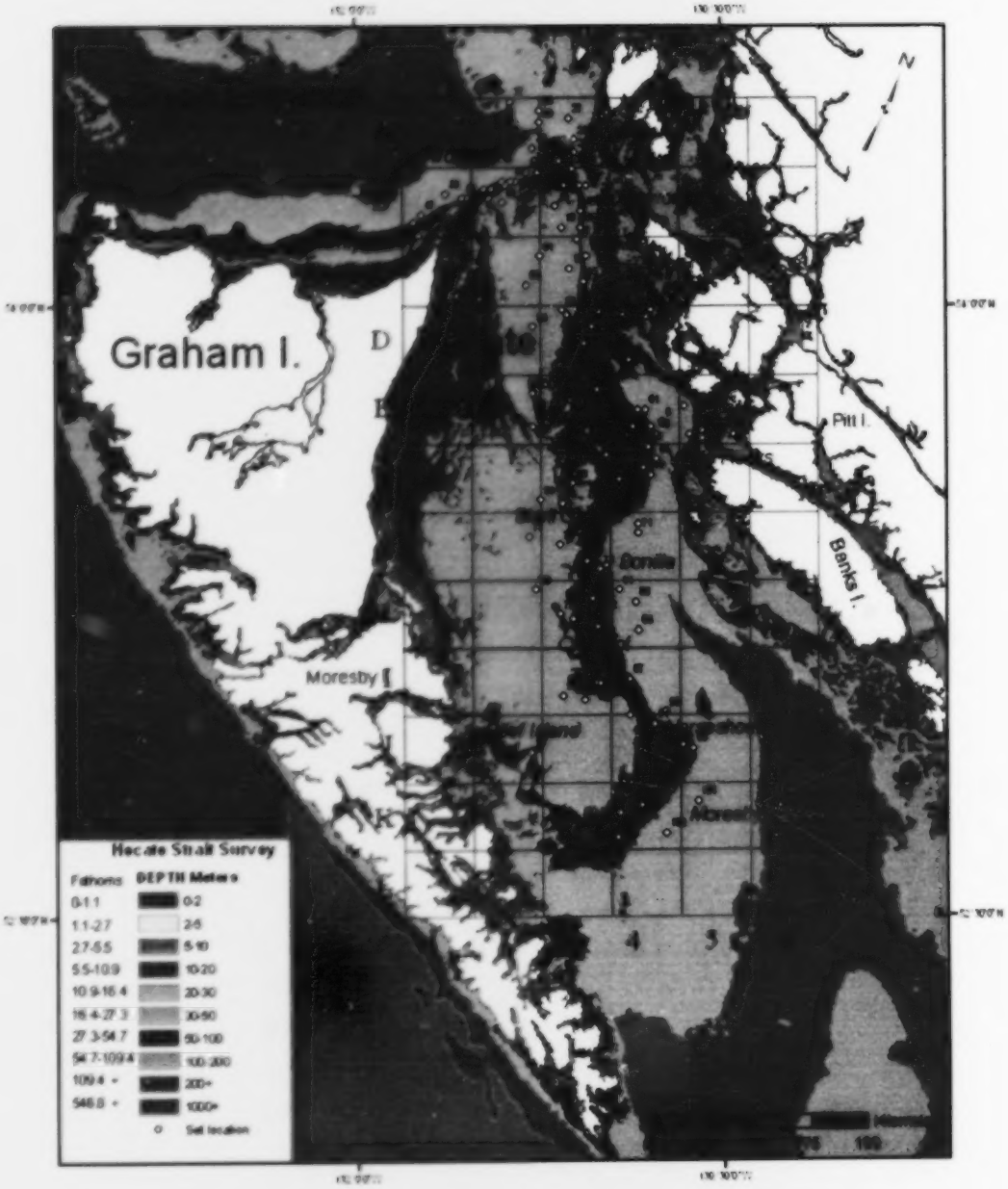


Figure 1: Haul locations, Major fishing grounds and survey grid for the 2003 Hecate Strait multi-species bottom trawl survey, May 19 – June 7, 2003.

Figures

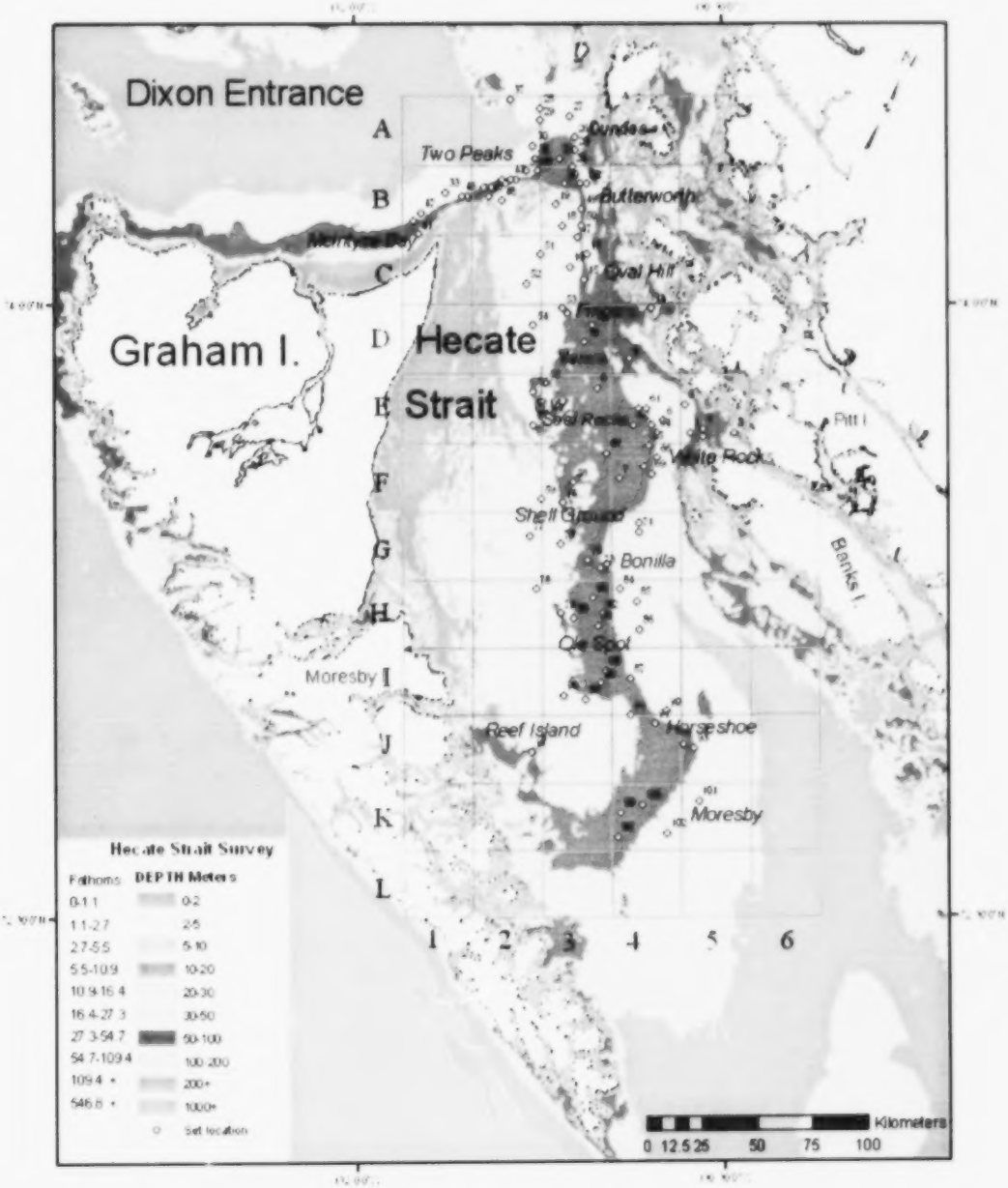


Figure 1: Haul locations, Major fishing grounds and survey grid for the 2003 Hecate Strait multi-species bottom trawl survey, May 19 – June 7, 2003.

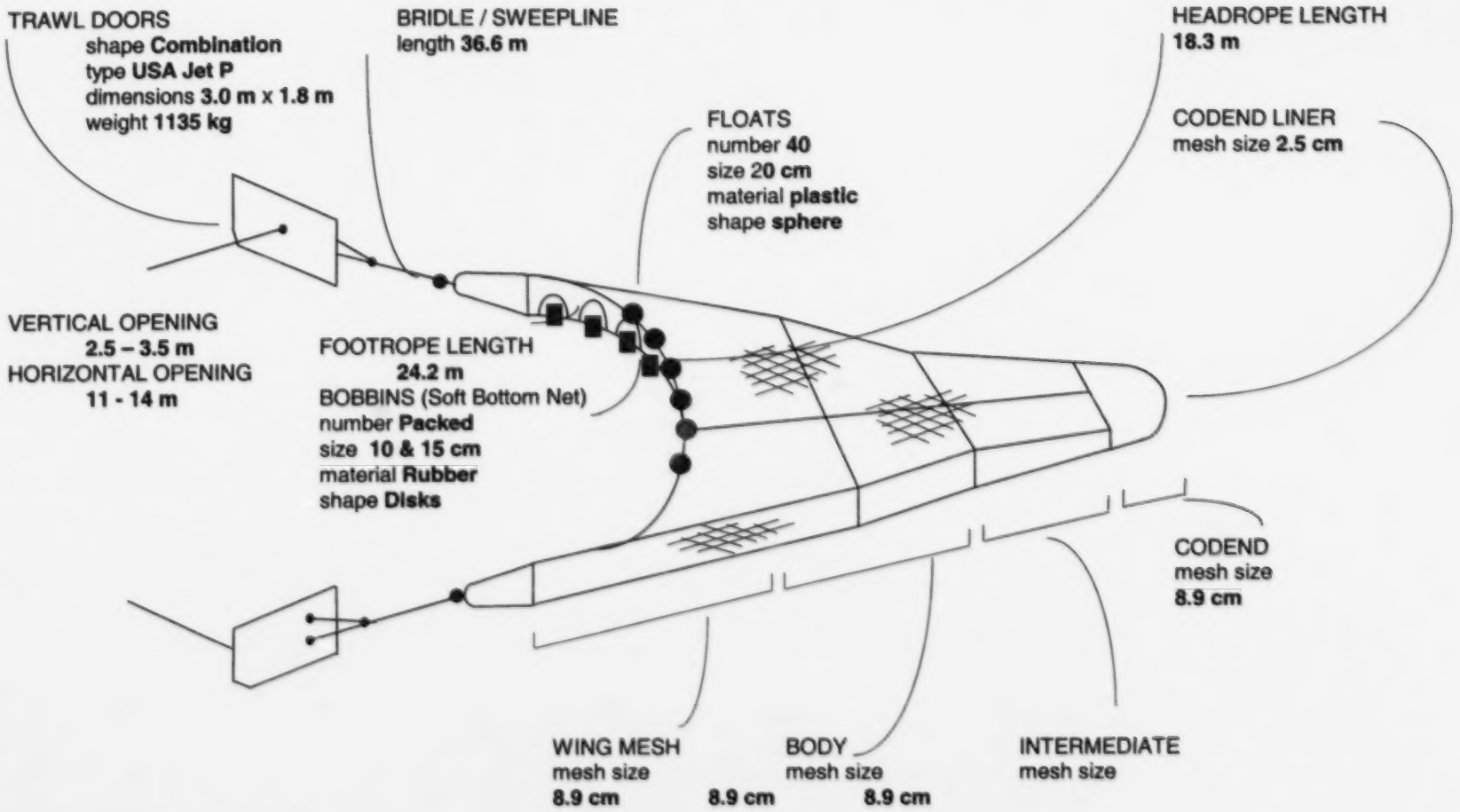


Figure 2: Specifications for the Yankee 36 used by the CCGS WE RICKER during the Hecate Strait multi-species survey, May 19 – June 07, 2003, "Soft Bottom Net" configuration.

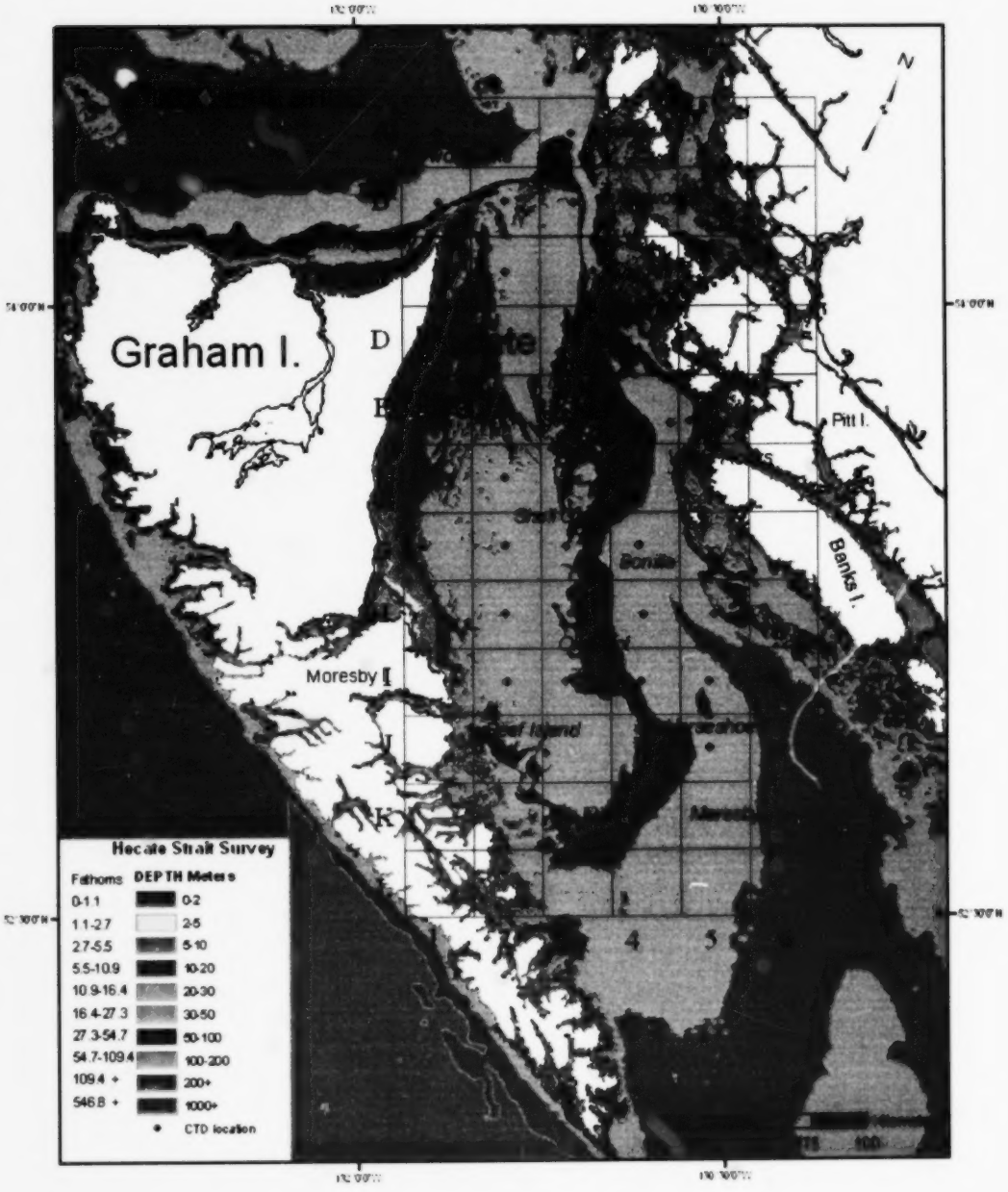


Figure 3: CTD cast locations in Hecate Strait during the Hecate Strait multi-species bottom trawl survey, May 19 – June 7, 2003.

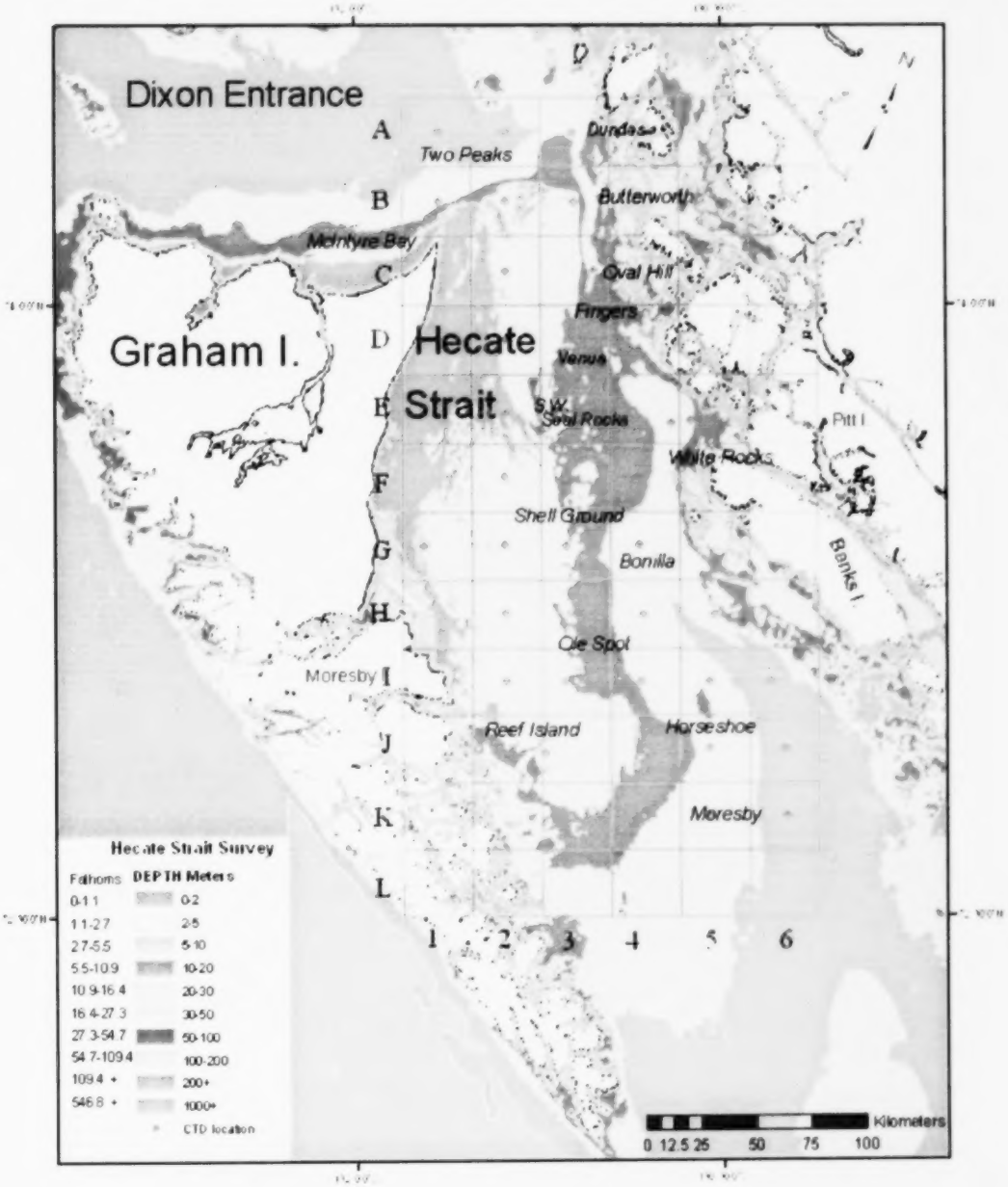


Figure 3: CTD cast locations in Hecate Strait during the Hecate Strait multi-species bottom trawl survey, May 19 – June 7, 2003.

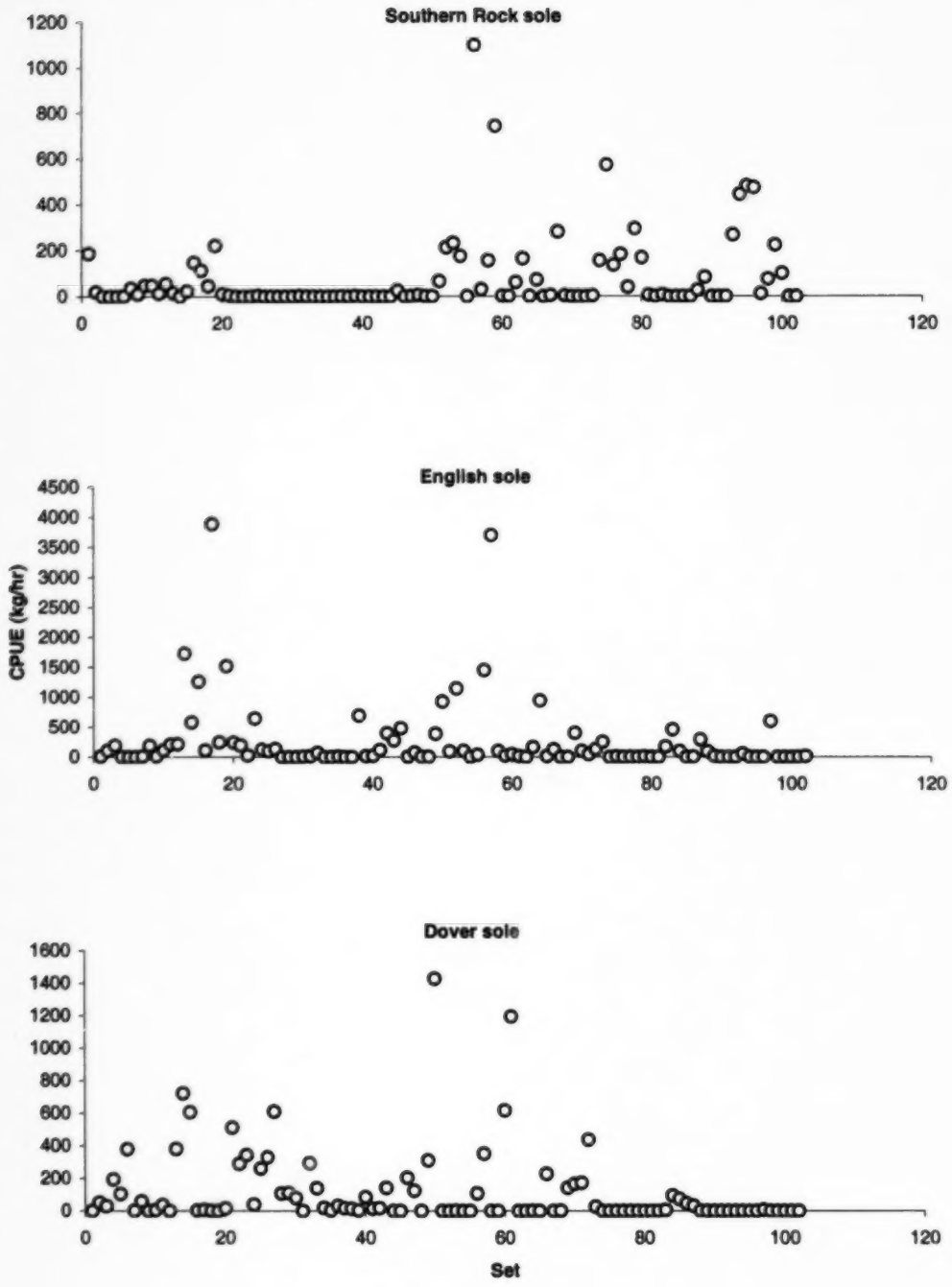


Figure 4: Catch per unit effort (kg/hr) for Southern rock sole, English sole, and Dover sole by set.

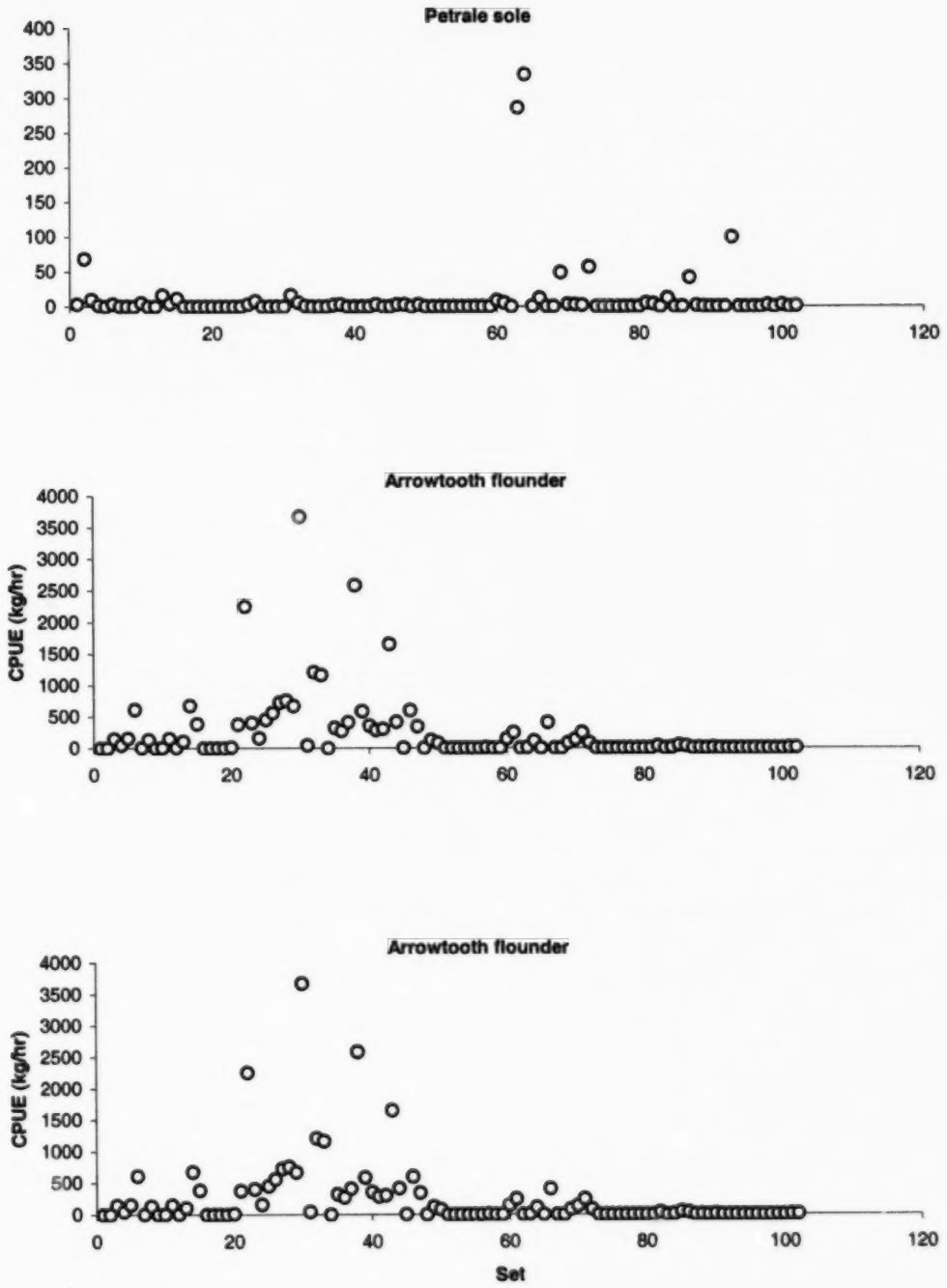


Figure 5: Catch per unit effort (kg/hr) for petrale sole, arrowtooth flounder and rex sole by tow.

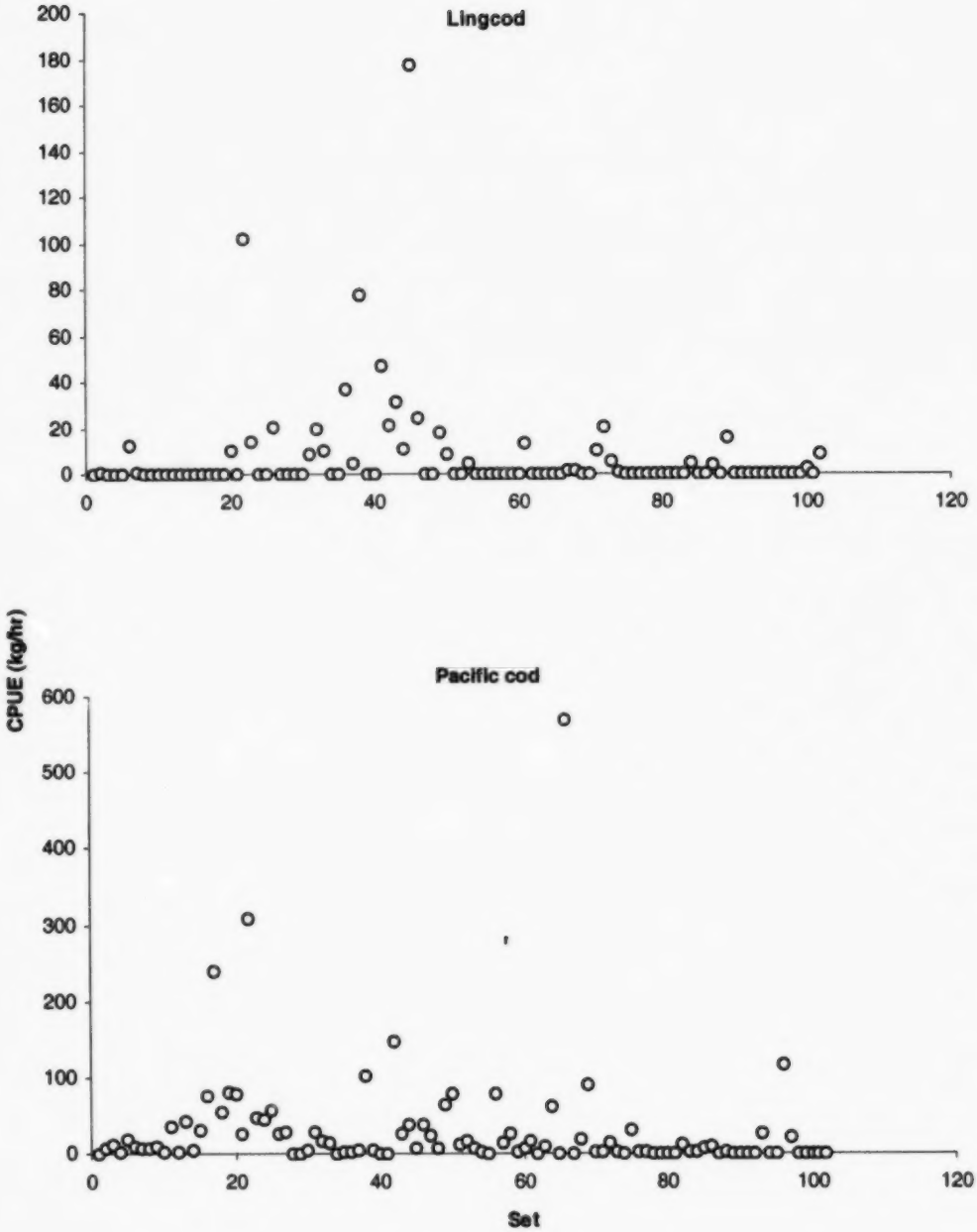
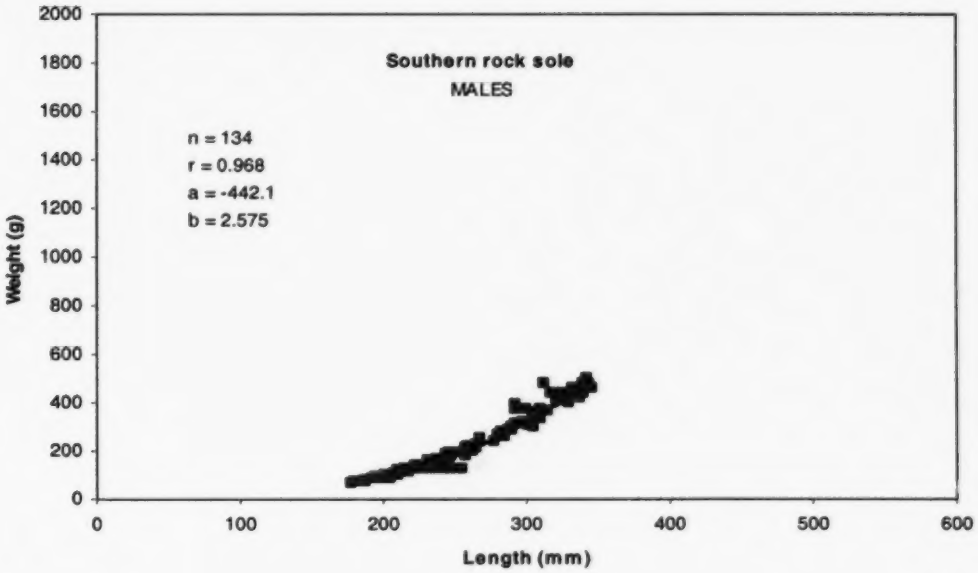


Figure 6: Catch per unit effort (kg/hr) for lingcod and Pacific cod by tow.



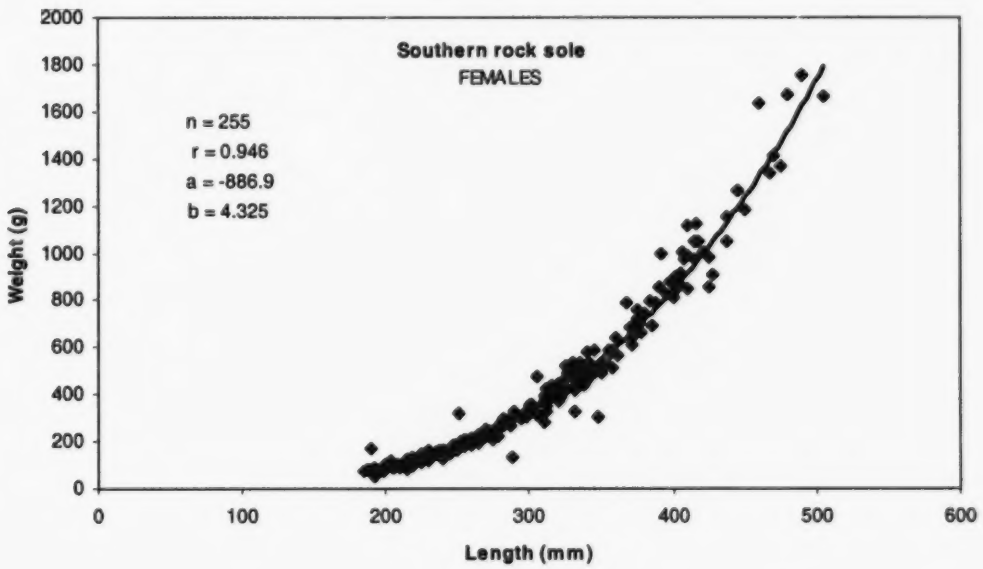
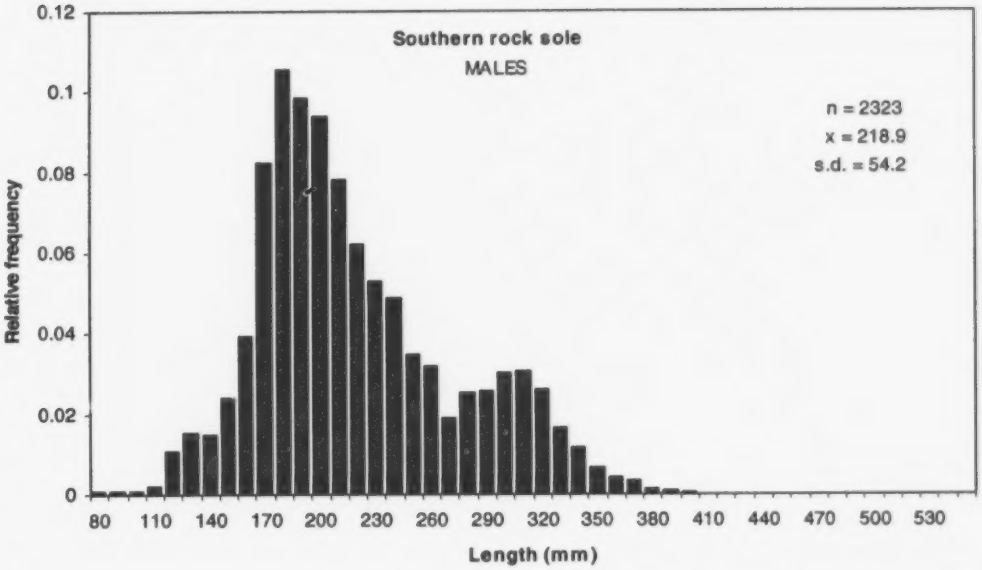


Figure 7: Length - weight relationship by sex for southern rock.



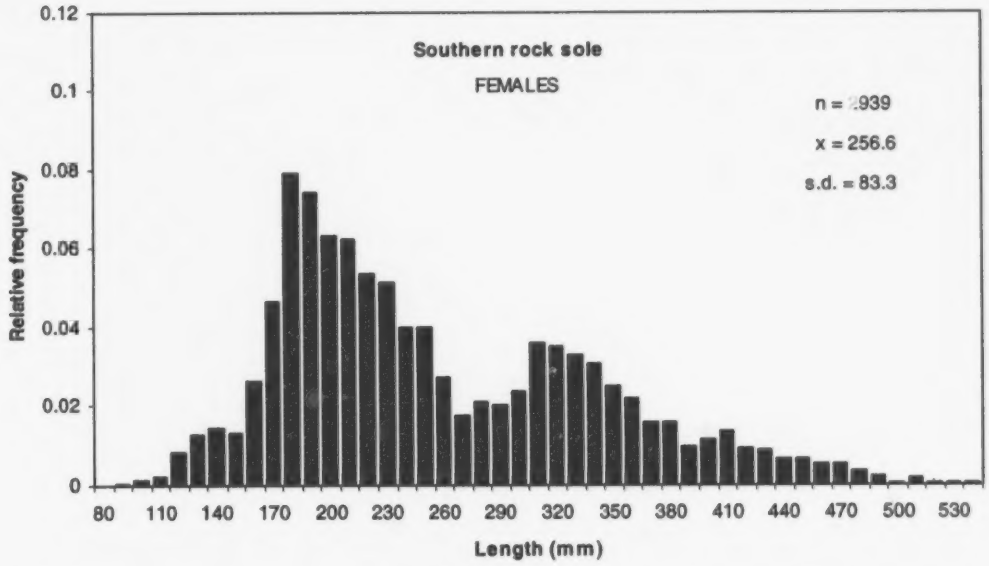


Figure 8: Length frequency distributions by sex southern rock sole.

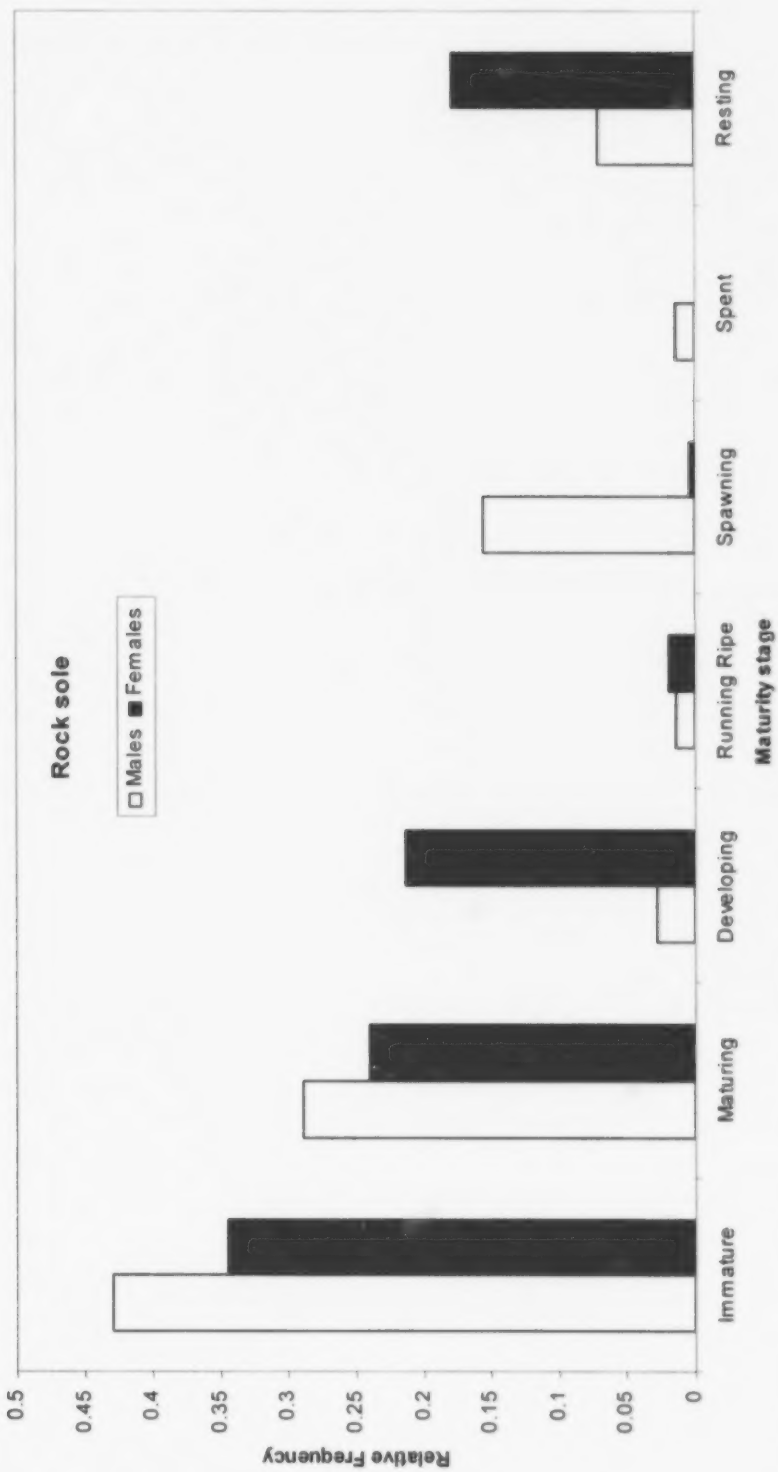


Figure 9: Stages of maturity by sex for southern rock sole.

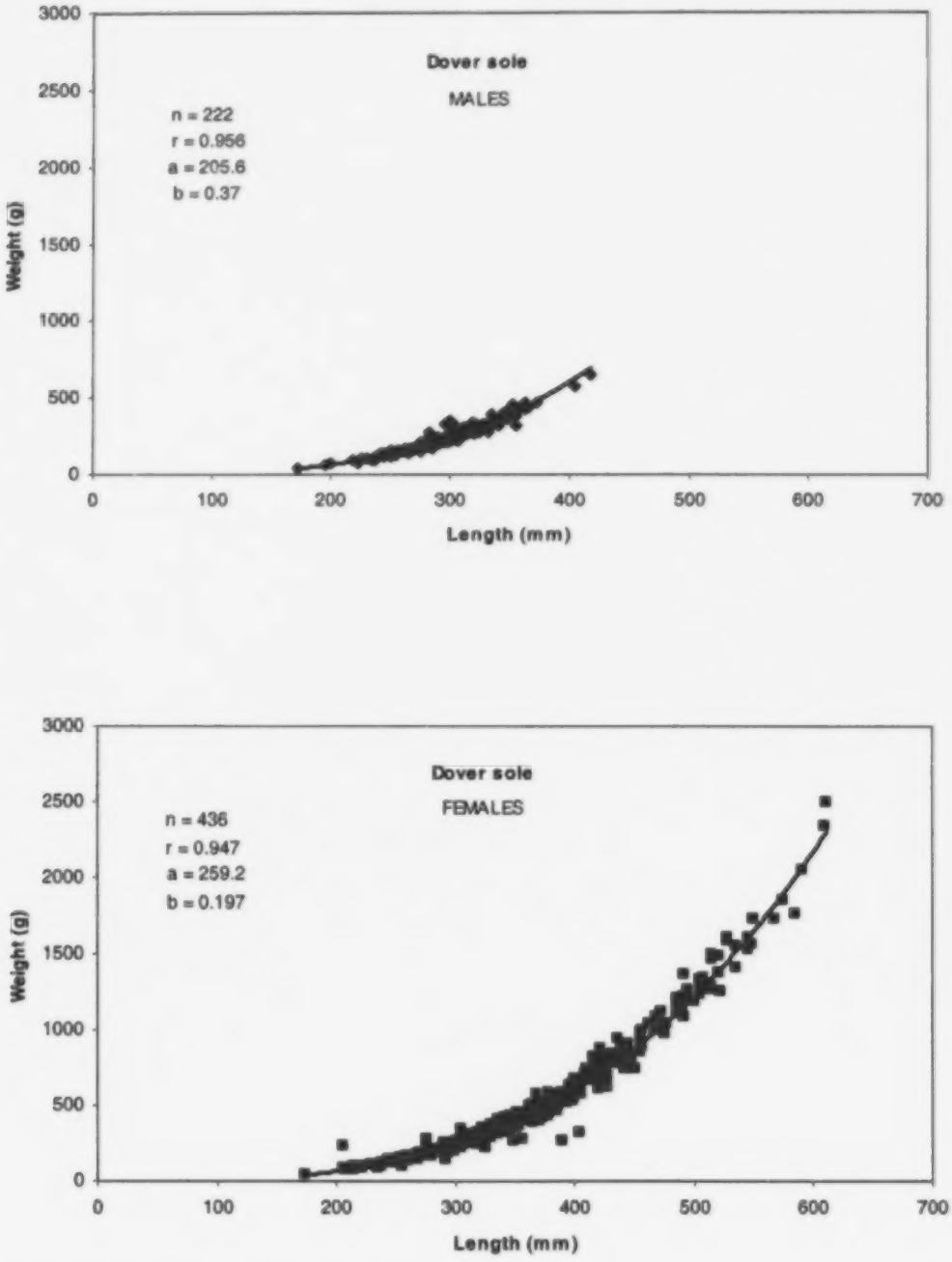
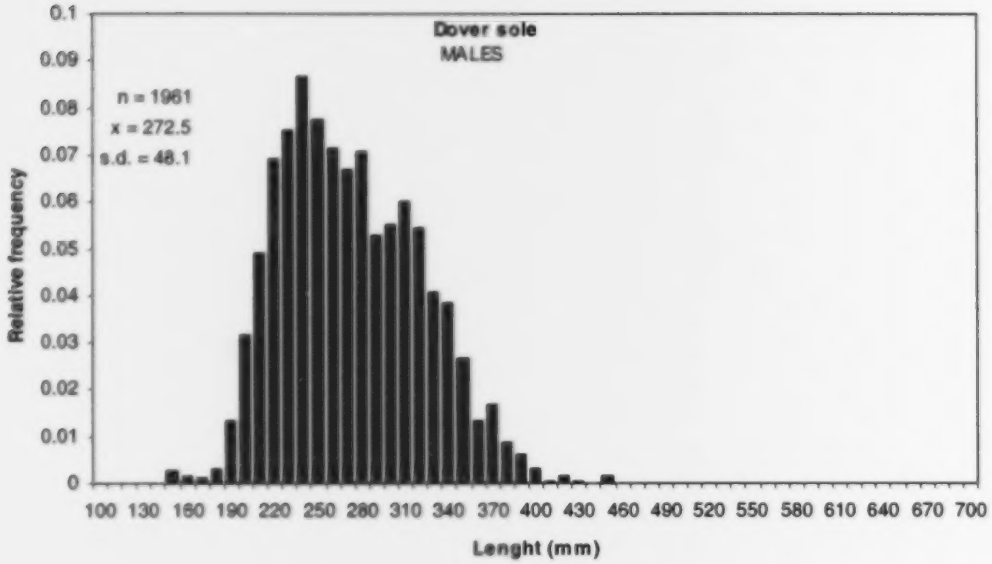


Figure 10: Length - weight relationship by sex for Dover sole.



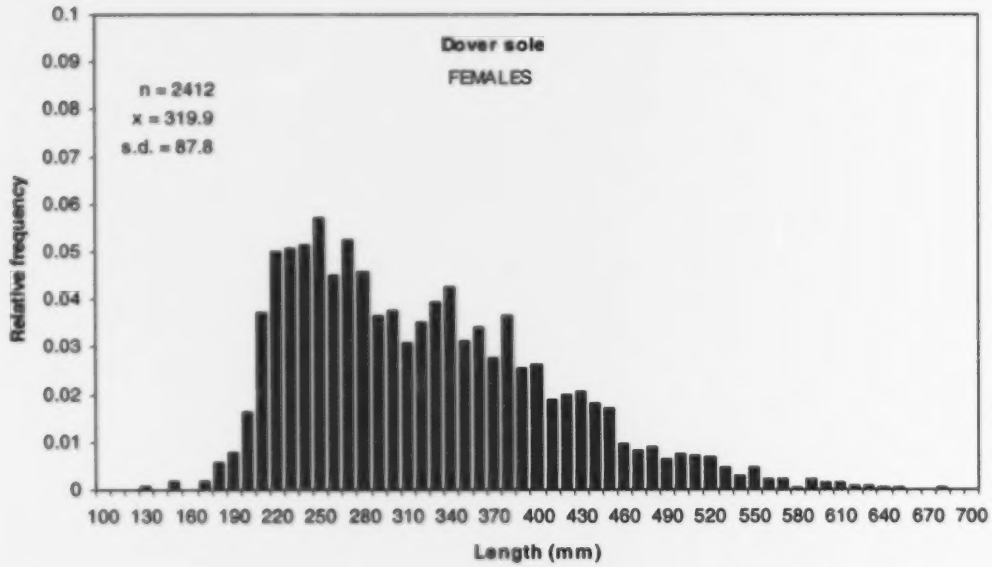


Figure 11: Length frequency distribution by sex for Dover sole.

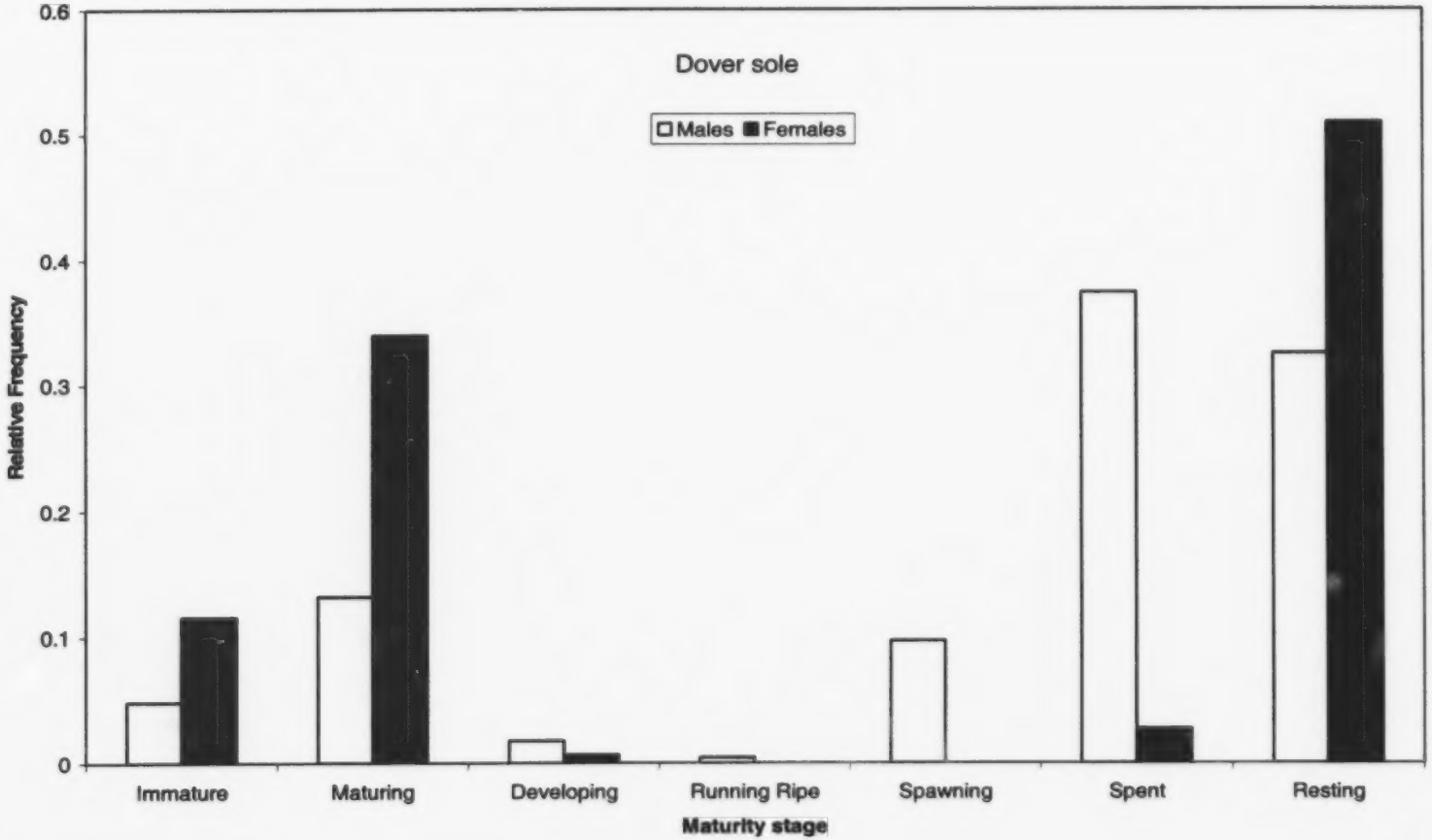
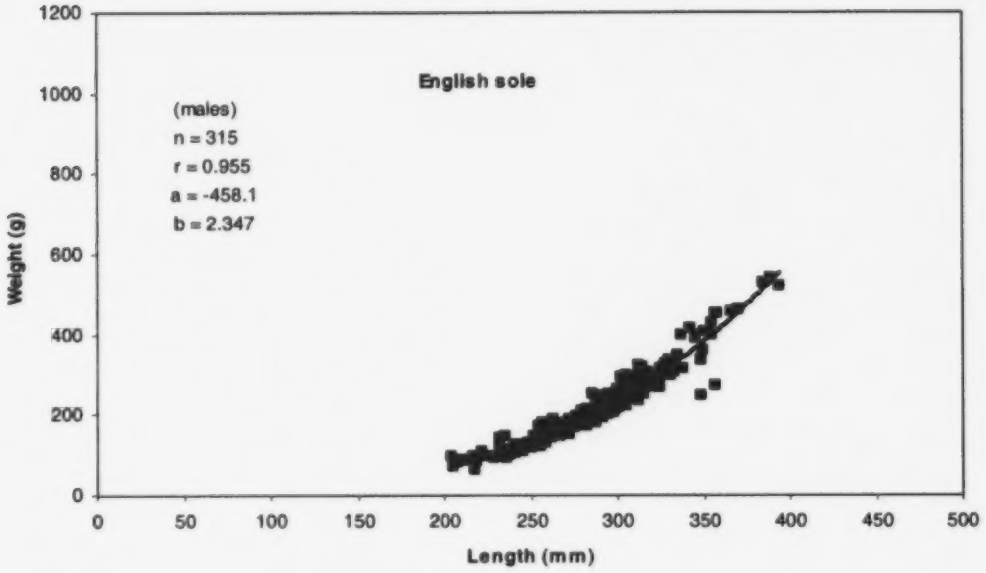


Figure 12: Stages of maturity by sex for Dover sole.



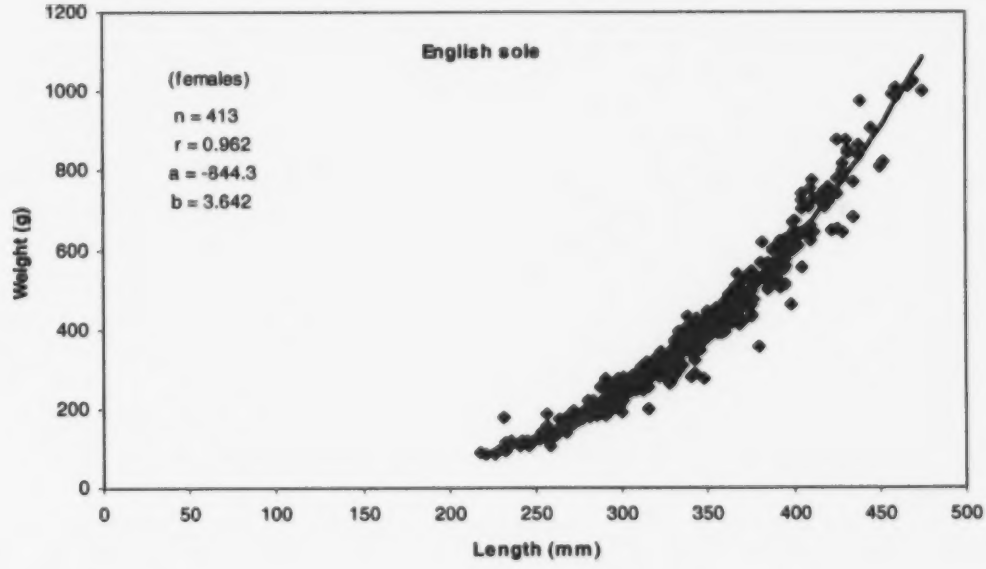
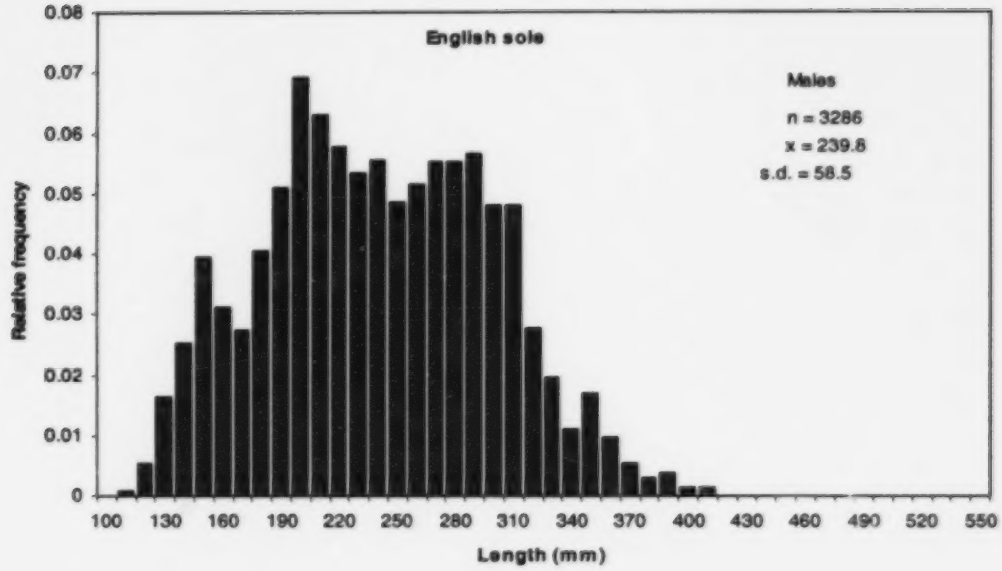


Figure 13: Length - weight relationship by sex for English sole.



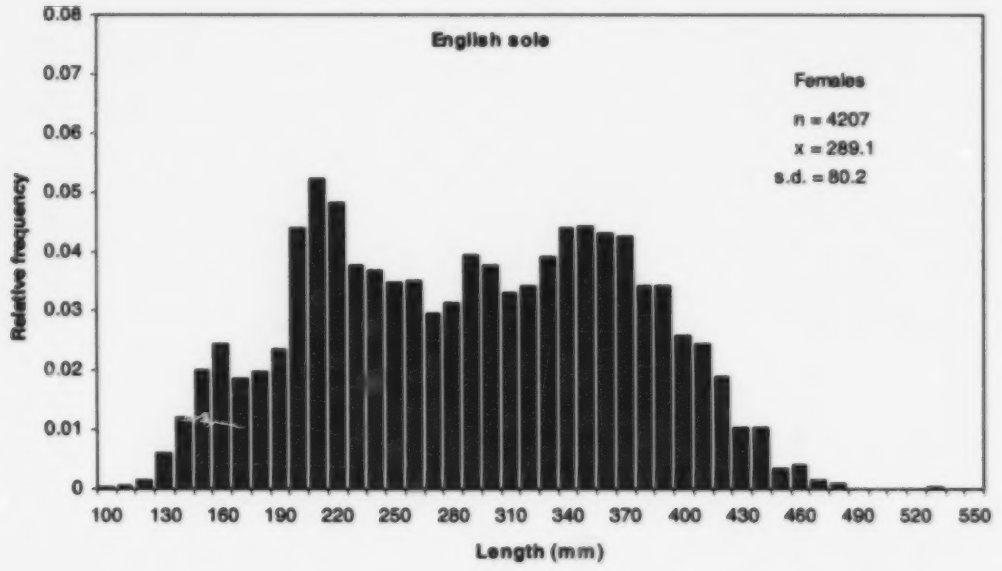


Figure 14: Length frequency distribution by sex for English sole.

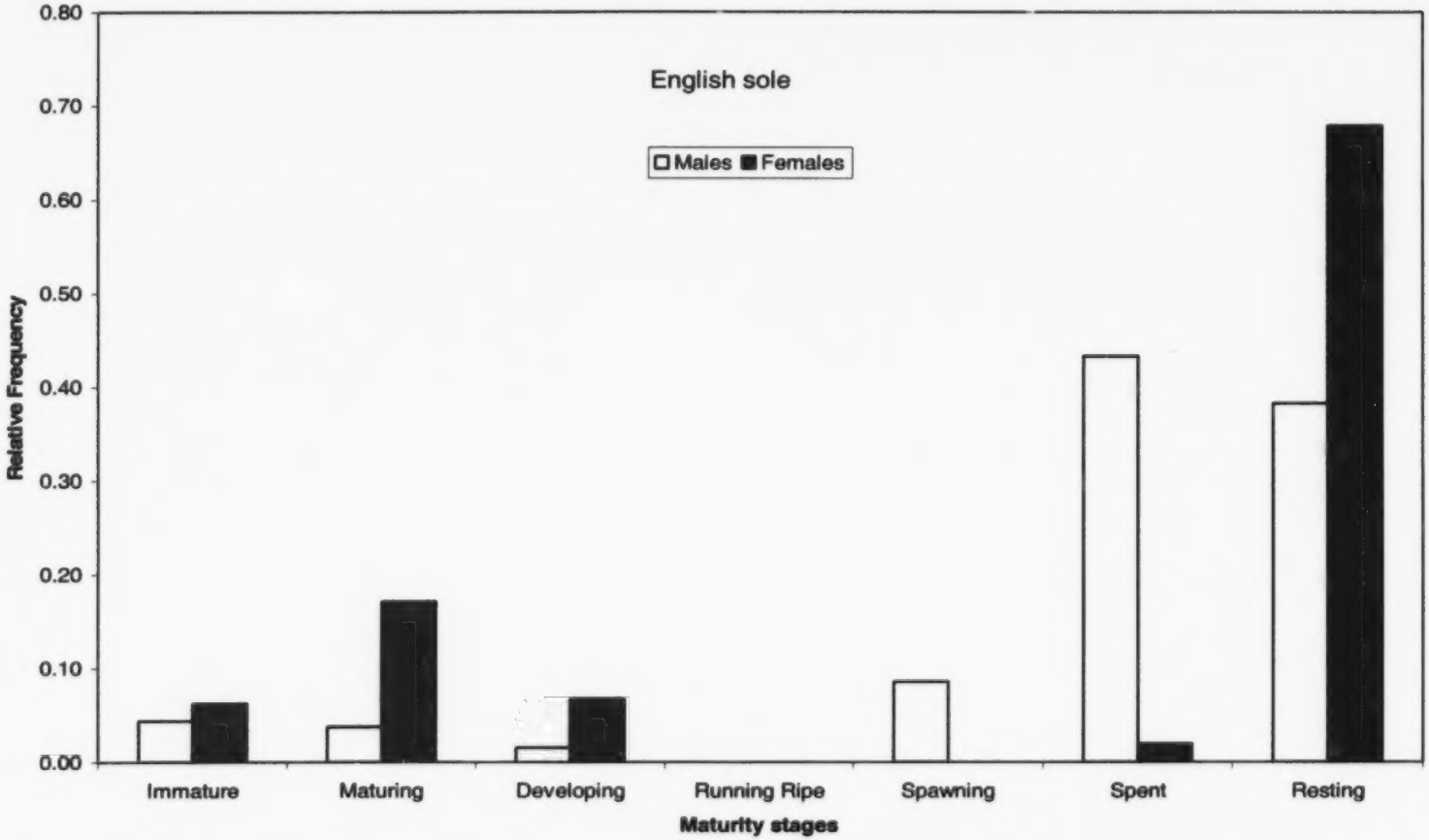
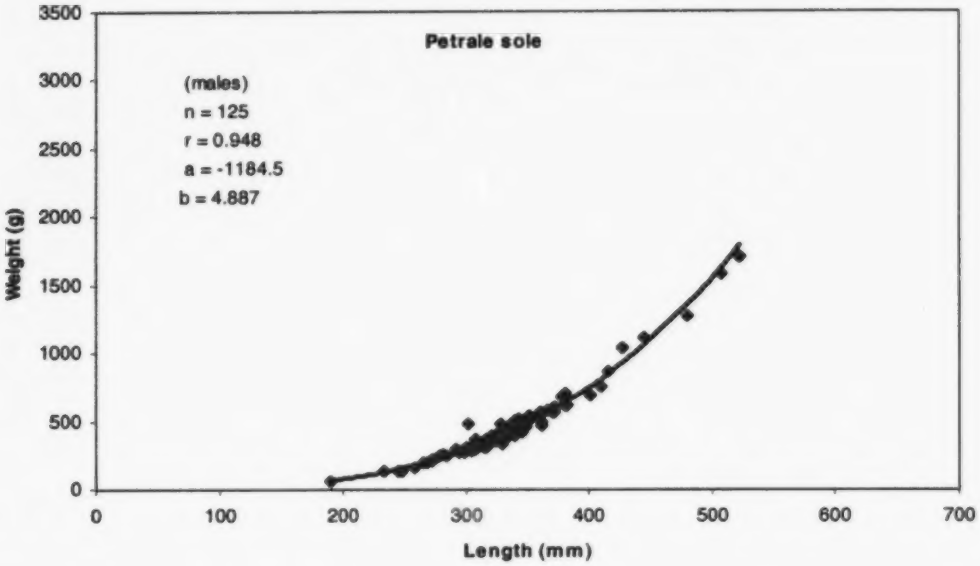


Figure 15: Stages of maturity by sex for English sole.



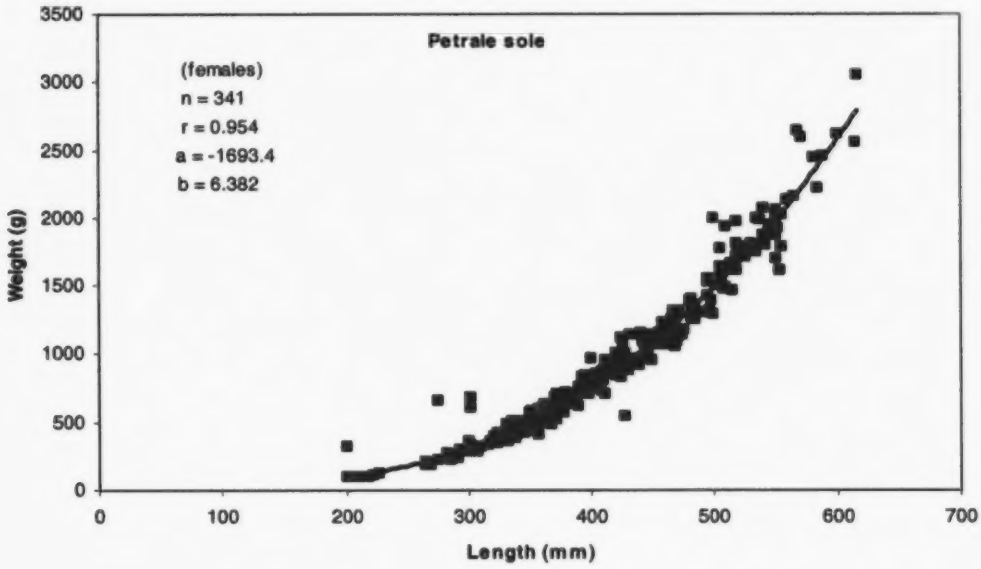
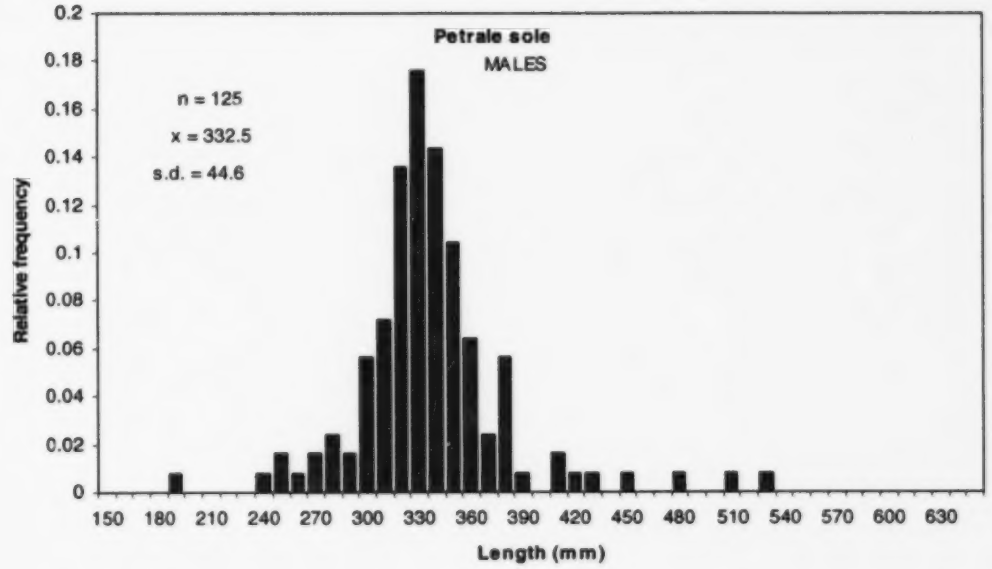


Figure 16: Length - weight relationship by sex for petrale sole.



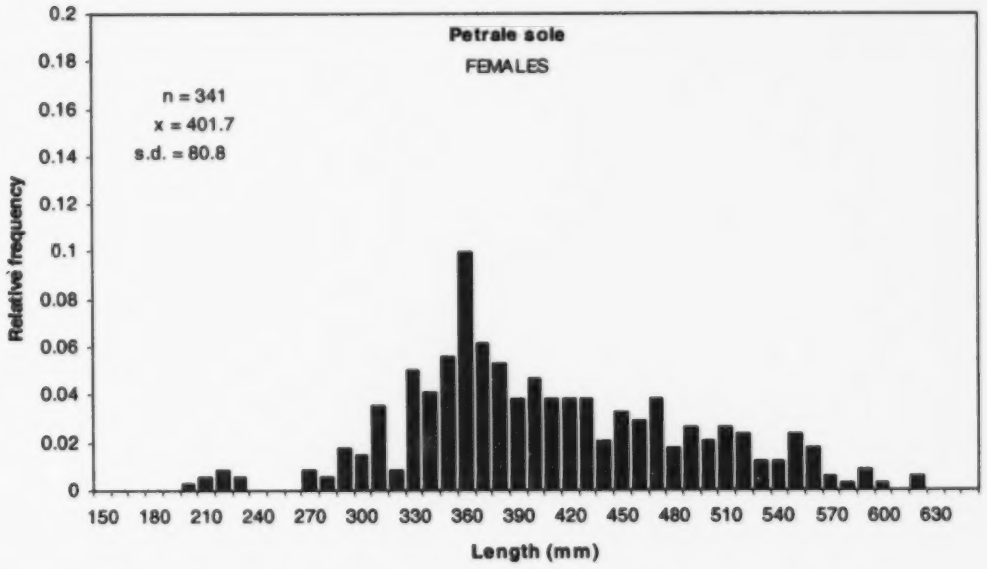


Figure 17: Length frequency distribution by sex for petrale sole.

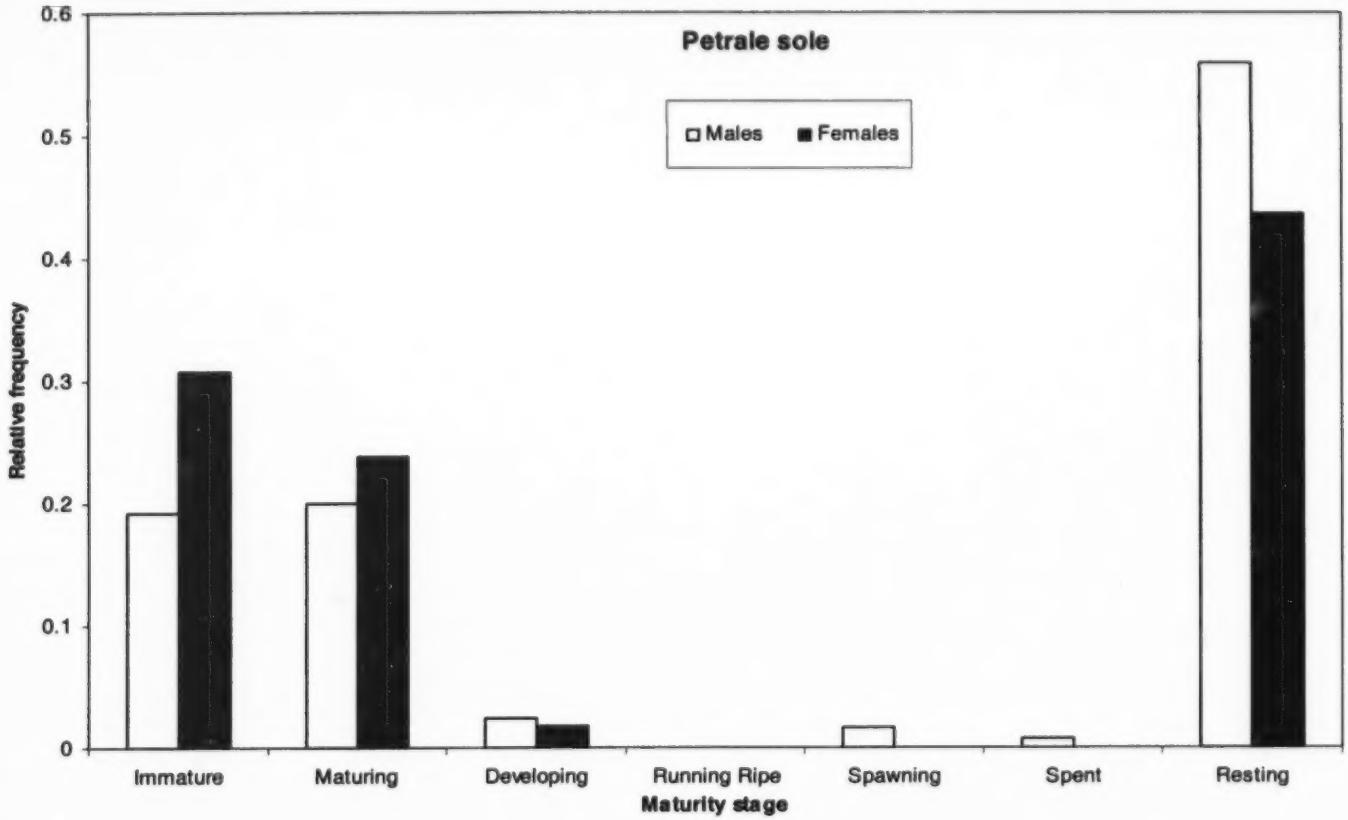
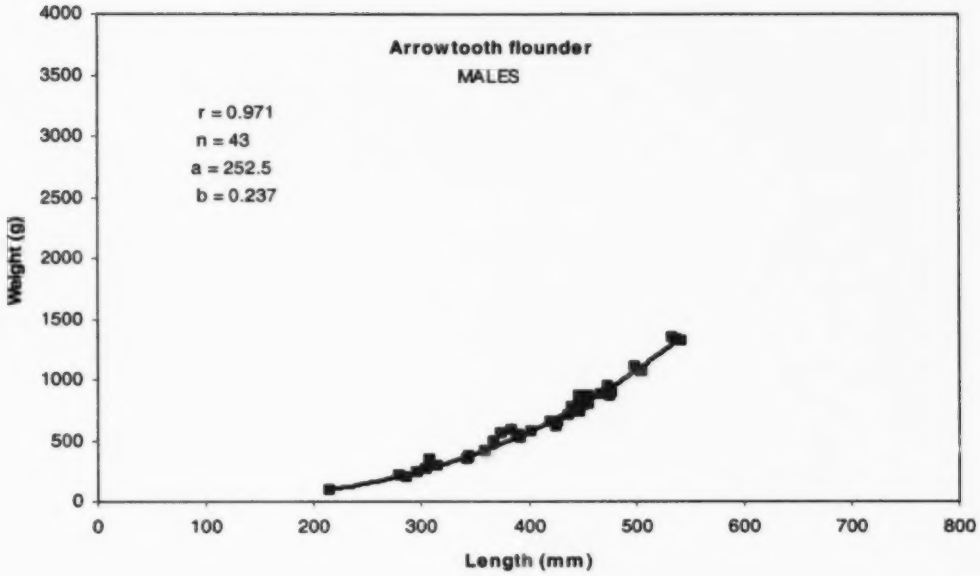


Figure 18: Stages of maturity by sex for petrale sole.



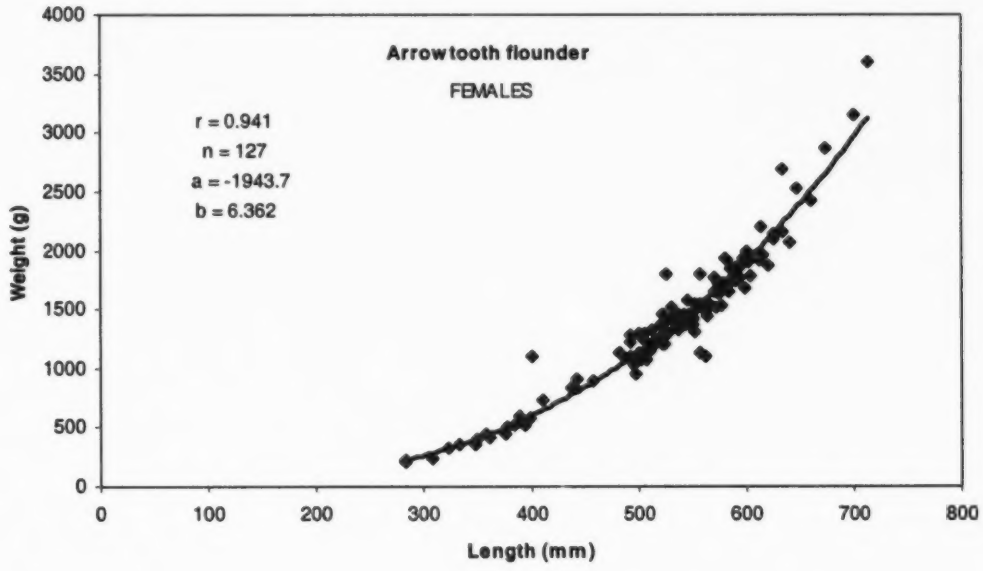
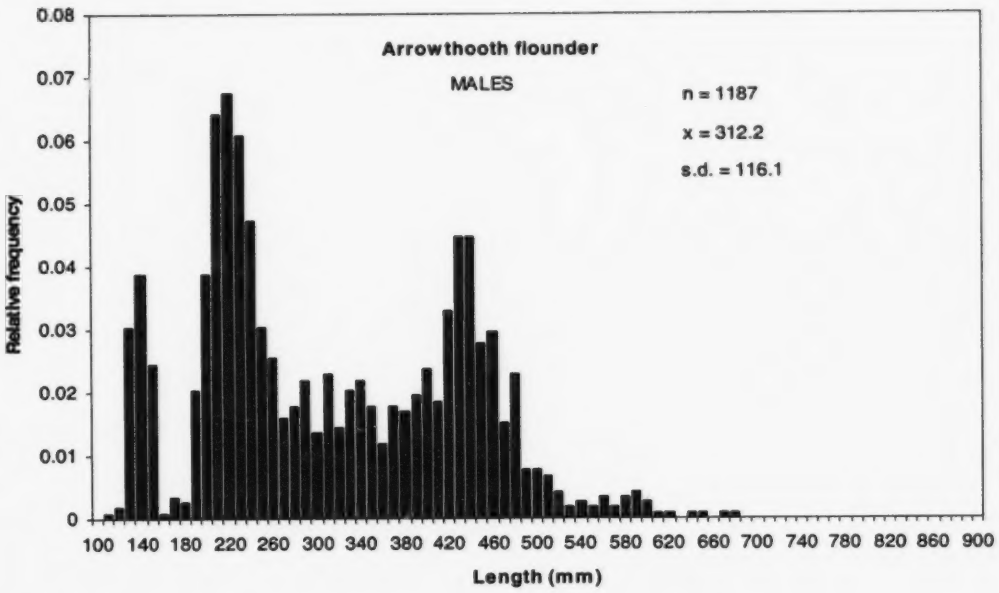


Figure 19: Length - weight relationship by sex for arrowtooth flounder.



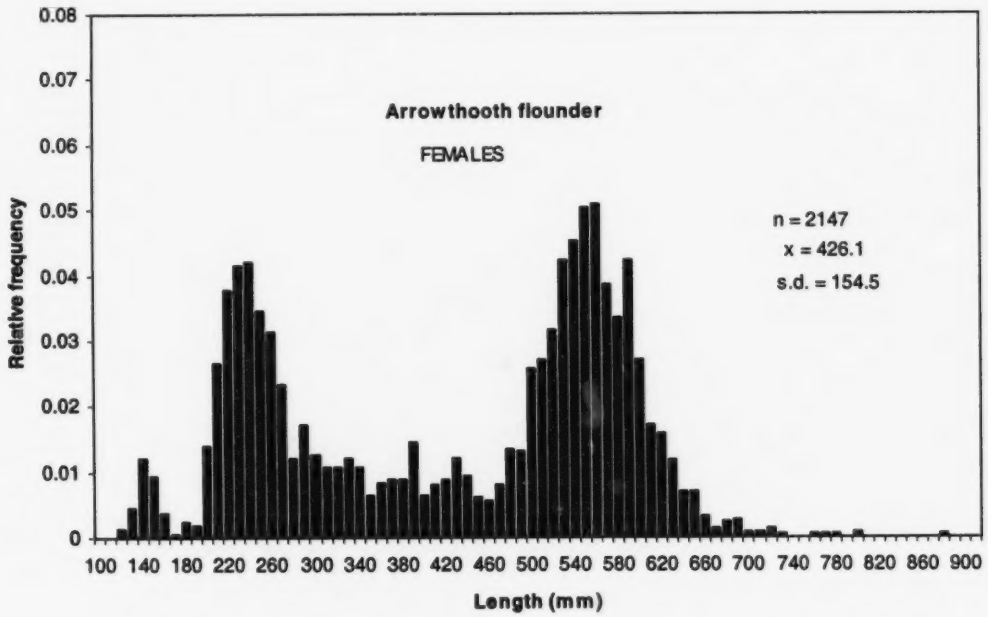


Figure 20: Length frequency distribution by sex for arrowtooth flounder.

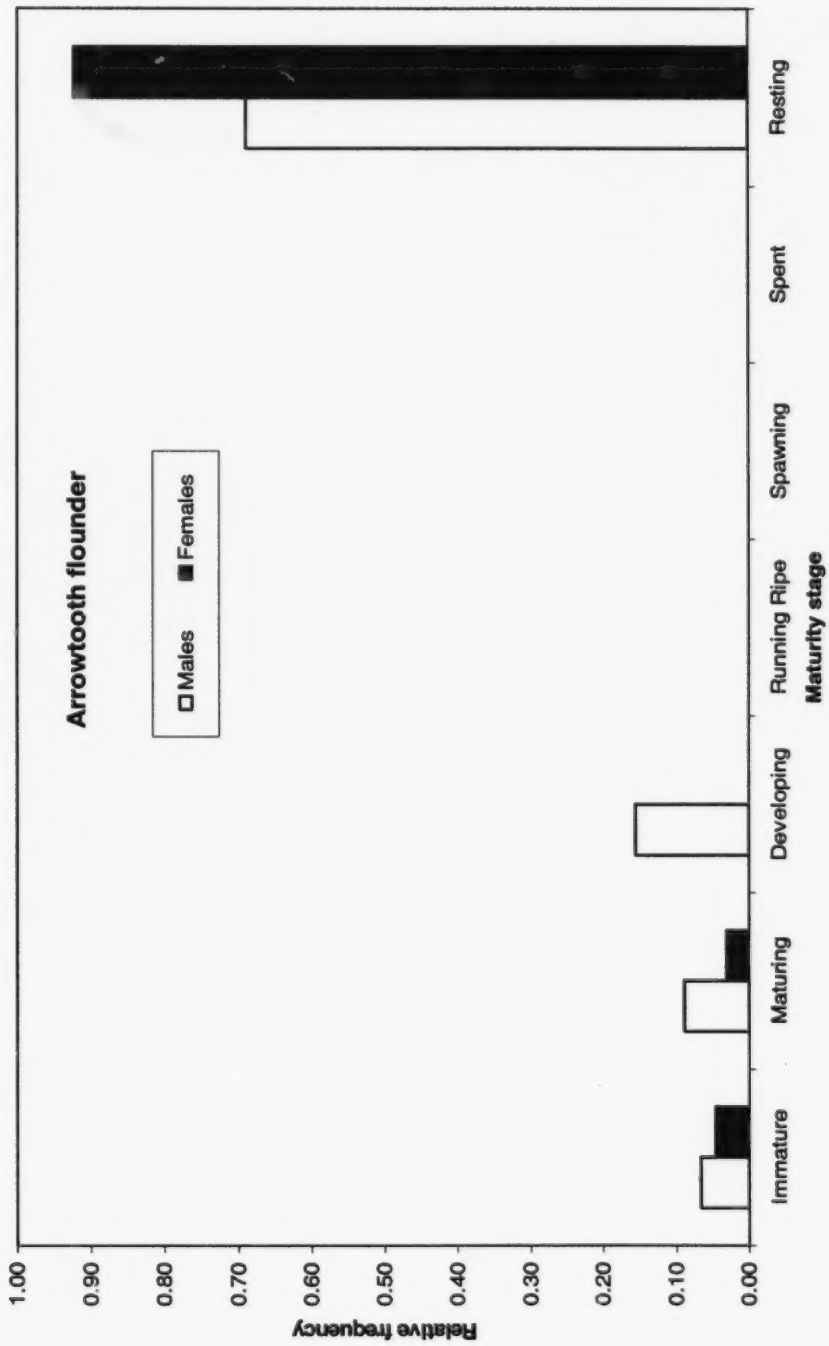
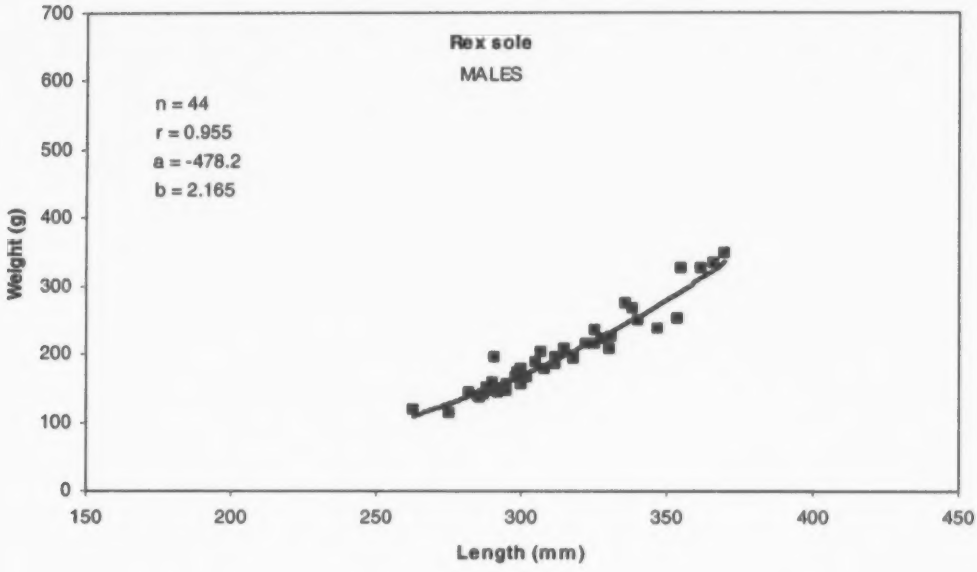


Figure 21: Stages of maturity by sex for arrowtooth flounder.



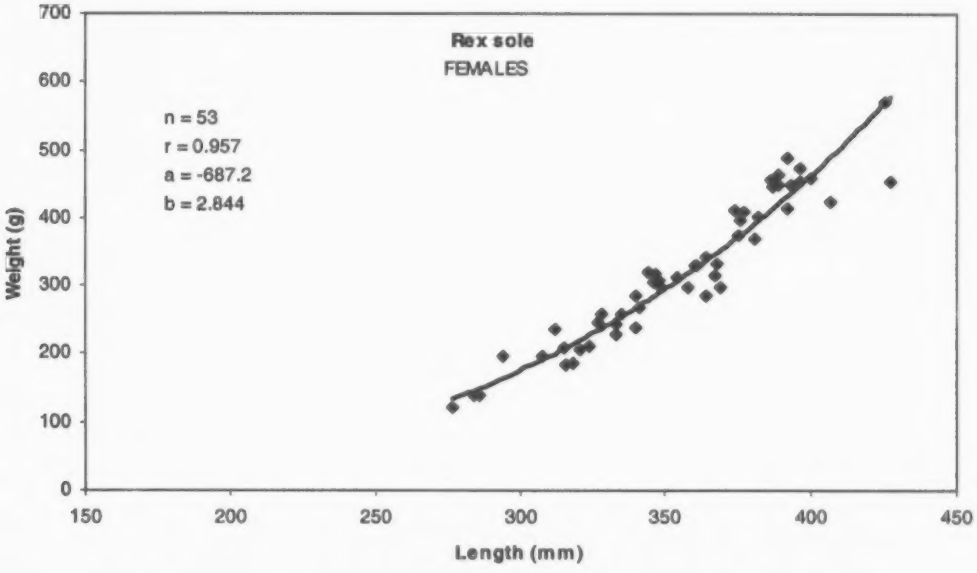
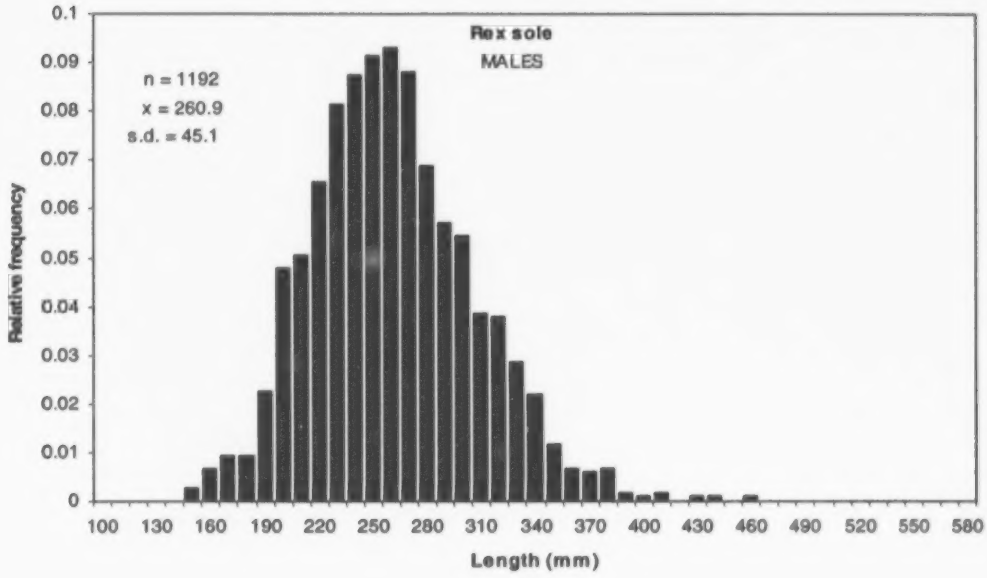


Figure 22: Length - weight relationship by sex for rex sole.



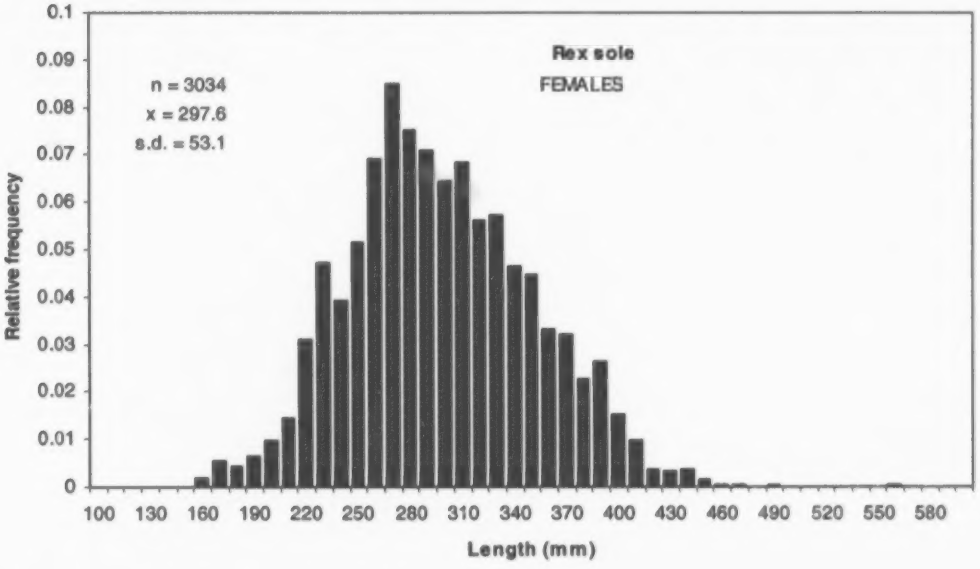


Figure 23: Length frequency distribution by sex for rex sole.

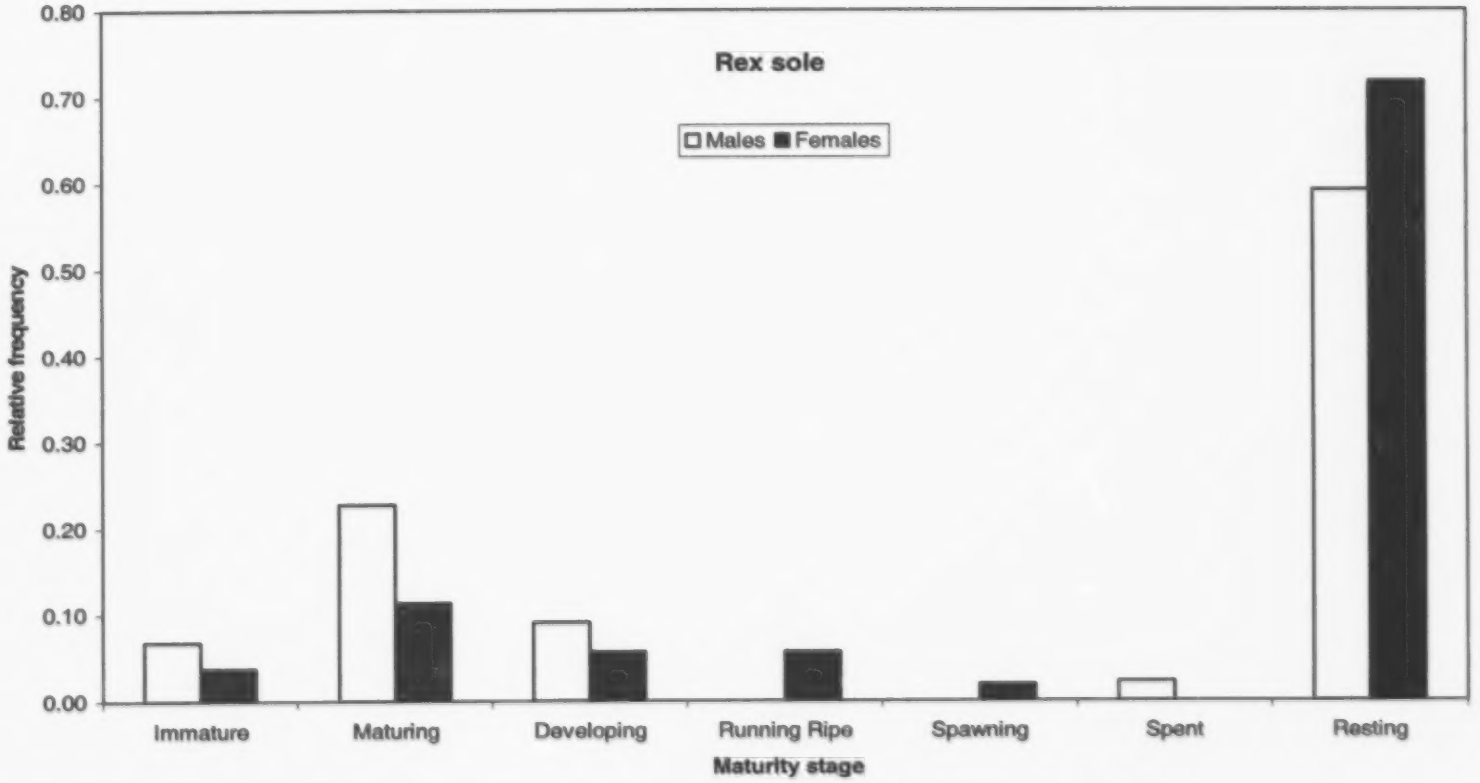
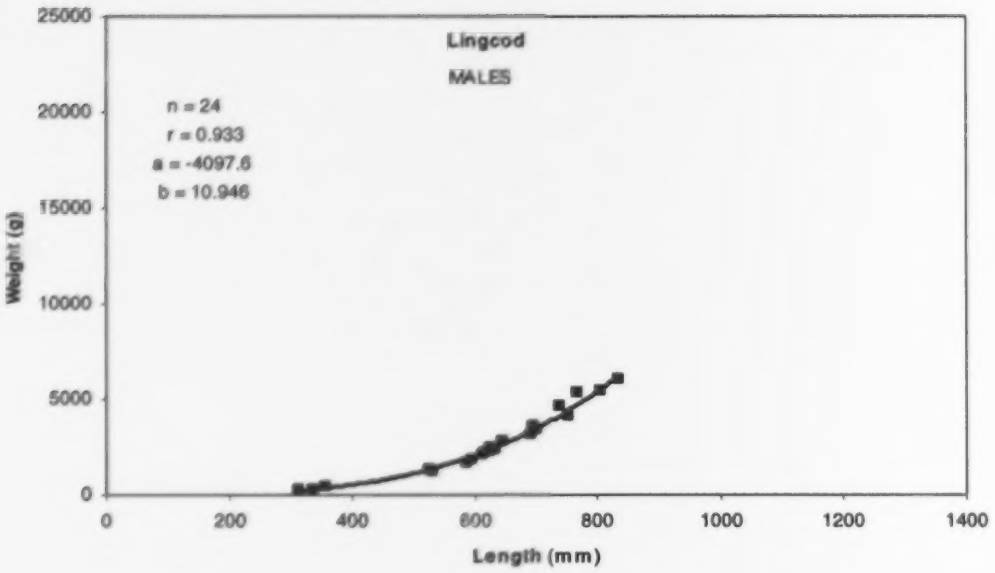


Figure 24: Stages of maturity by sex for rex sole.



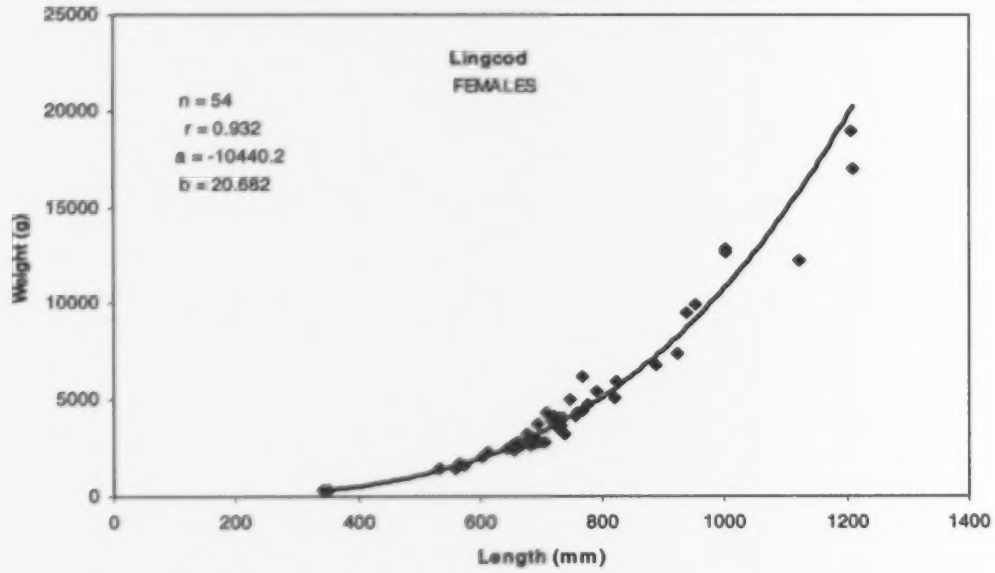
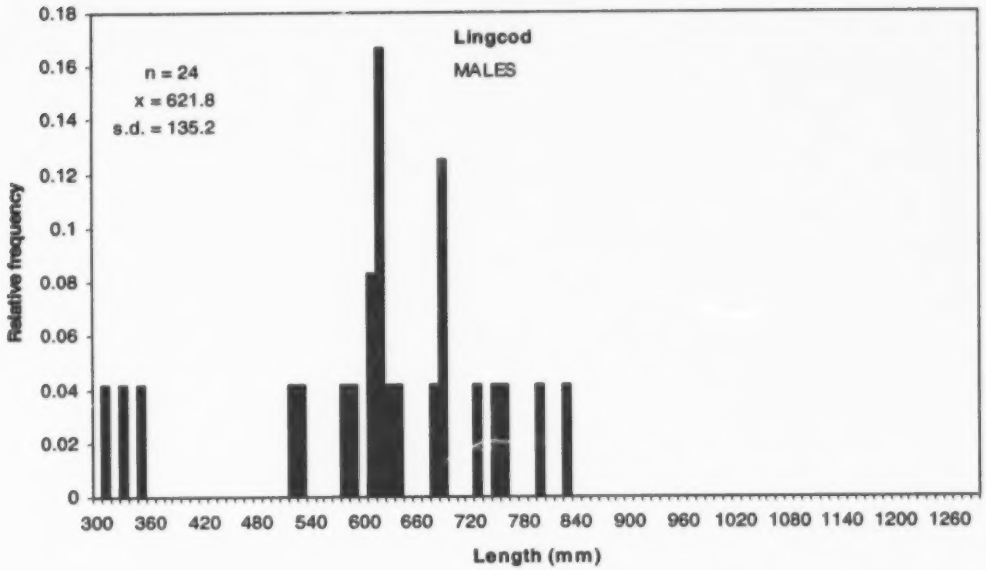


Figure 25: Length - weight relationship by sex for lingcod.



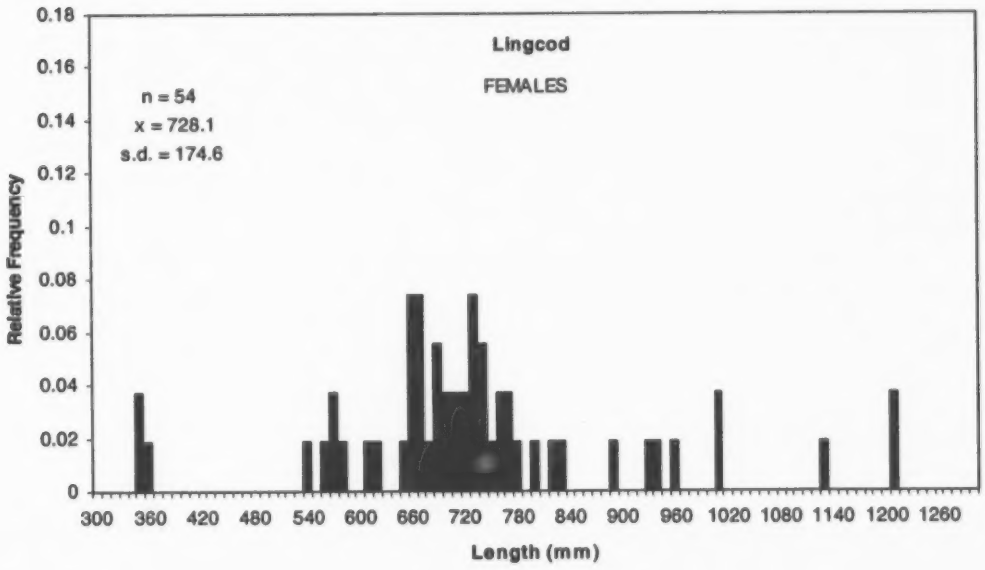


Figure 26: Length frequency distribution by sex for lingcod.

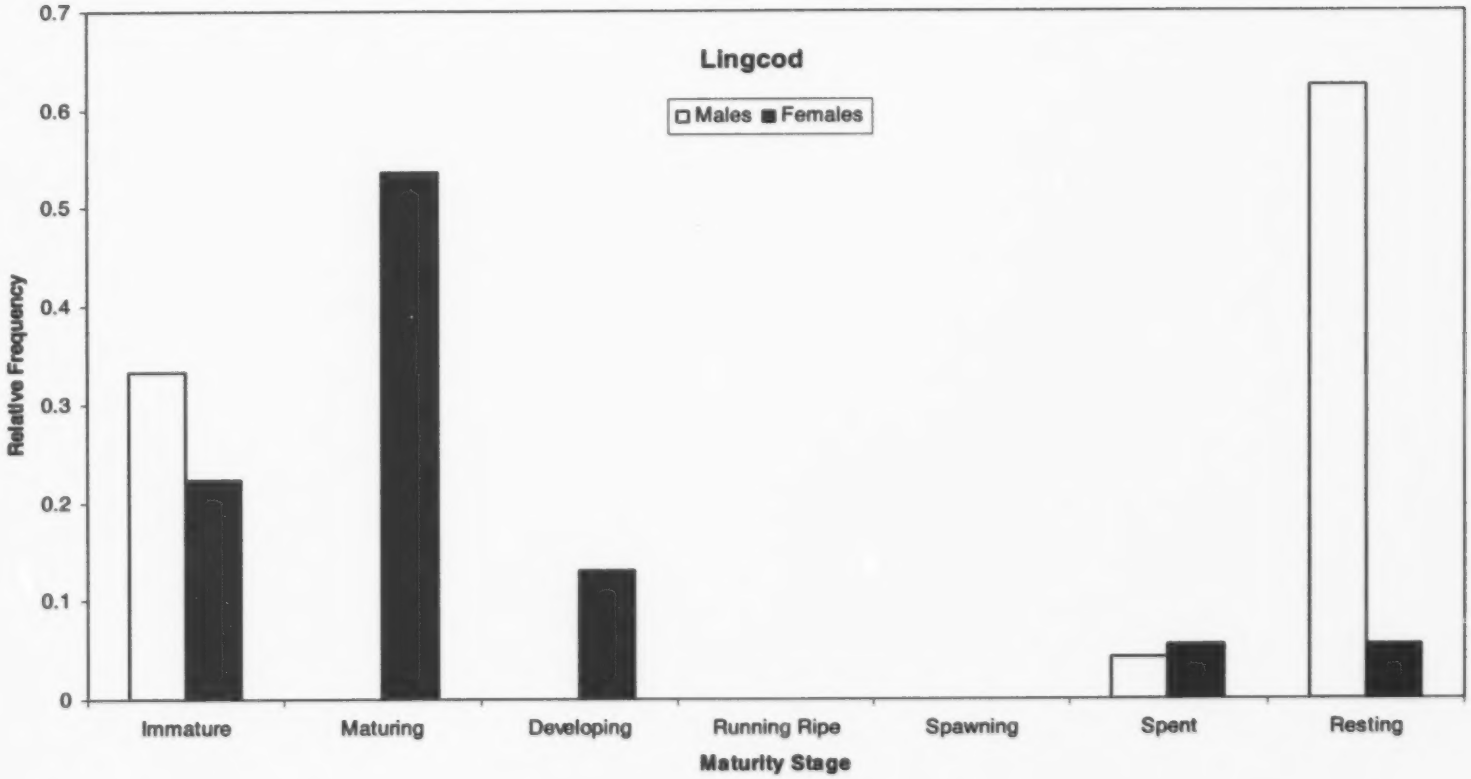
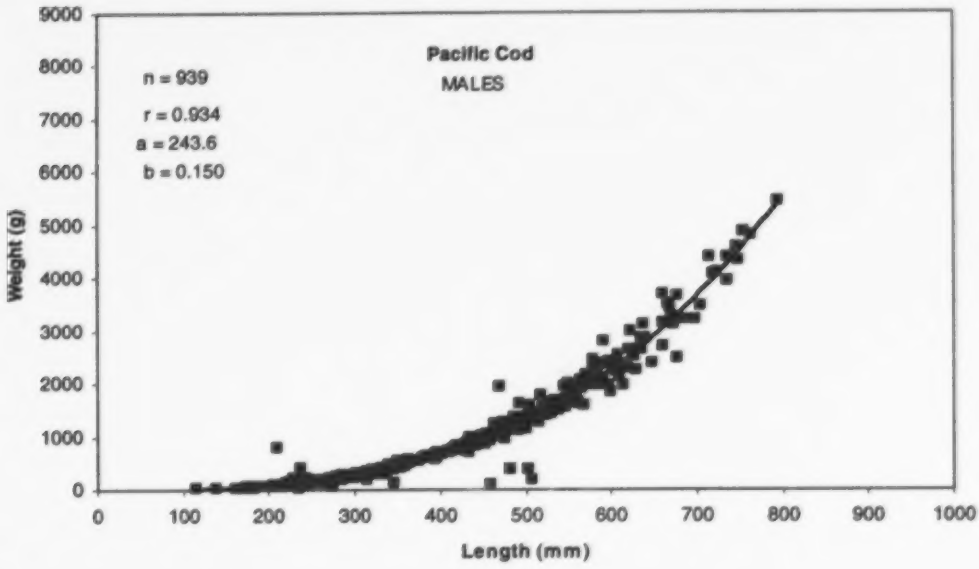


Figure 27: Stages of maturity by sex for lingcod.



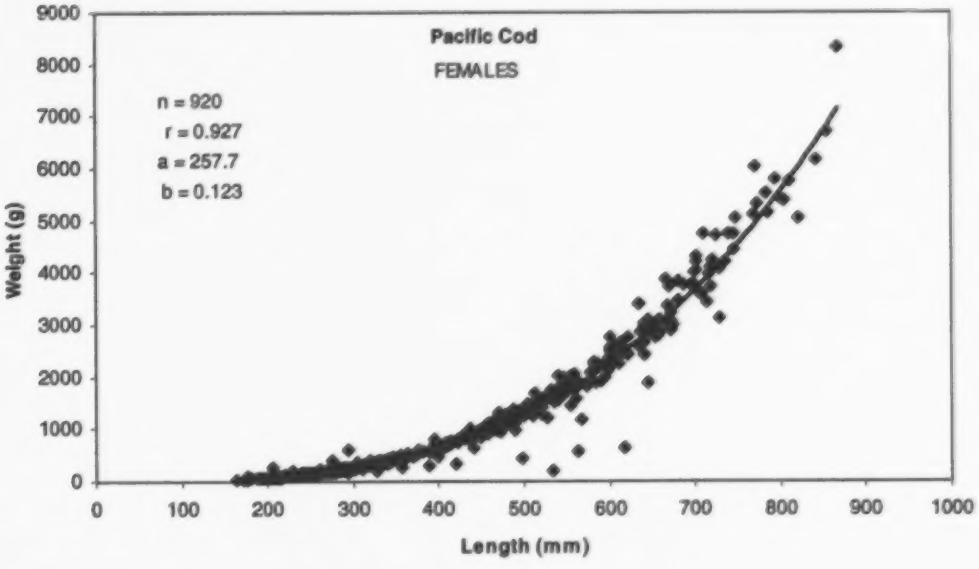
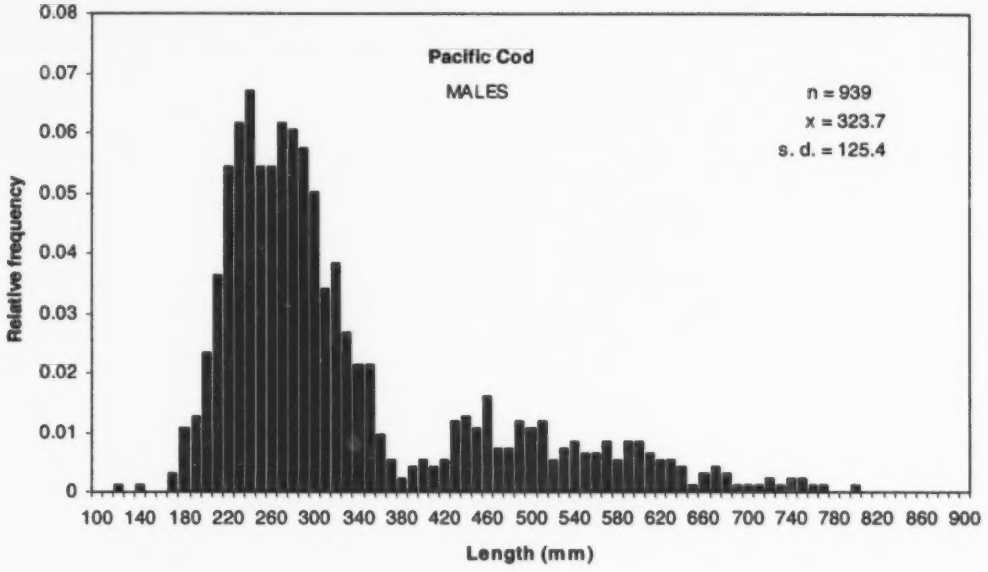


Figure 28: Length - weight relationship by sex for Pacific cod.



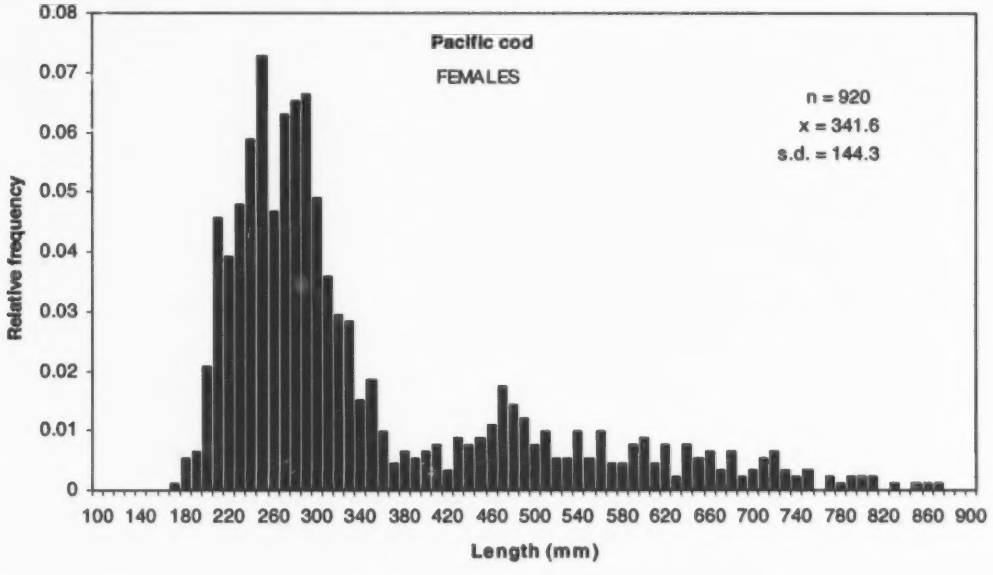


Figure 29: Length frequency distribution by sex for Pacific Cod.

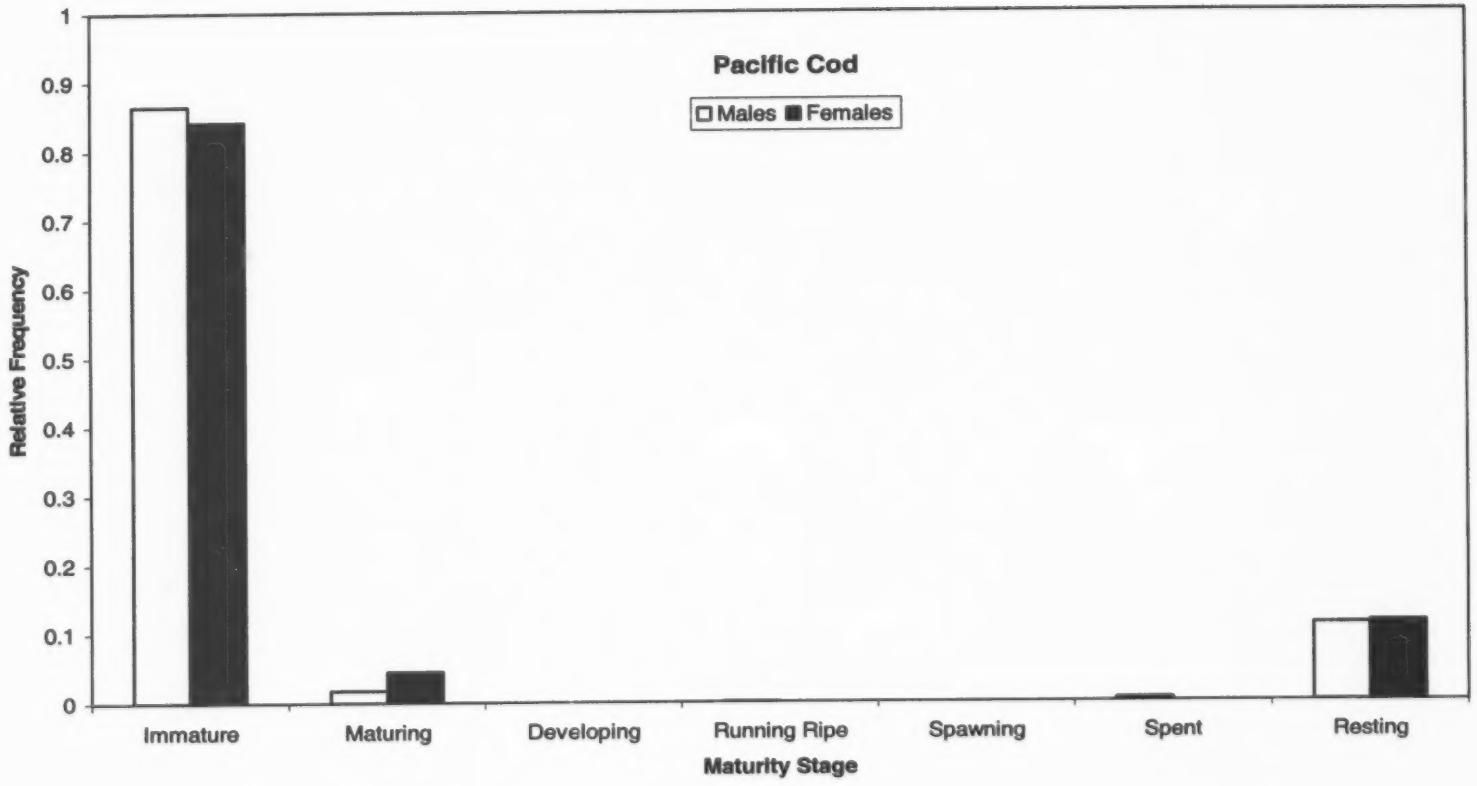


Figure 30: Stages of maturity by sex for Pacific cod.

Appendices

Appendix 1: Criteria used to determine sole maturity stages.

Maturity stage	Code	Testes	Ovaries
Immature	1	Testes very small string–like and somewhat translucent or pinkish in colour.	Ovaries very small, translucent or pinkish in colour and somewhat gelatinous in texture.
Maturing	2	Testes enlarged, a distinct bulge evident but still translucent or pinkish in colour.	Ovaries relatively small, pinkish-yellow or cream in colour, granular in texture. No distinct eggs visible.
Developing	3	Testes enlarged, brown-white or white in colour, firm in texture.	Ovaries large, cream or yellow in colour, containing opaque eggs that can be distinguished by direct observation. Sex may be determined externally.
Running Ripe	4	Testes large, white and easily broken. No sperm evident.	Ovaries containing partly or wholly translucent eggs. Sex easily determined externally.
Spawning	5	Testes large, white and sperm evident.	Ovaries containing entirely translucent, mature ova. Eggs loose and will run from oviducts under slight pressure.
Spent	6	Testes flaccid, shrunken and yellow-brown in colour. Sperm ducts enlarged and a small amount of sperm may be present.	Ovaries large, flaccid and purple in colour; a few translucent eggs may be left. Ovarian membrane very bloodshot and sac-like.
Resting	7	Testes firm, small and yellow-brown in colour. Sperm ducts small.	Ovaries contracted and firm, pinkish-grey to cream-yellow in colour and may appear granular in texture but no distinct eggs are visible.

Appendix 2: Criteria used to determine rockfish maturity and sex stages.

Maturity Stage	Code	Testes	Ovaries
Immature	1	Translucent pinkish brown , string-like	Small translucent, individual eggs not visible, granular texture, skein cloudy
Maturing	2	Translucent. String like, slight swelling, 2-4 mm, width	Small, yellow eggs; translucent or opaque, no black spots (evidence of previous spawning)
Developing / mature	3	Swelling, brown-white, brown in the center when broken and whitish at the margins less than 15 % volume of the body cavity	Large, yellow or orange eggs; opaque. Some black spots indicating reabsorbed larvae from previous spawning
Developed / fertilized	4	Large, white; easily broken;15-20 % of the volume of the abdominal cavity	Hydrated/fertilized eggs. Large, orange-yellow eggs; translucent.
Running / embryos	5	Very large, running sperm, milt easily expressed by squeezing the abdomen	Embryos or larvae, include eyed eggs; translucent
Spent	6	White-brown; sperm still in duct. Brown at the margins and white in the center. Small, 10-15% the volume of the abdominal cavity	Large, flaccid, red ovaries skein translucent. A few larvae and eggs may be present
Resting	7	Triangular in cross-section; small, brown, leathery, < 10 % the volume of the abdominal cavity	Moderate size, firm, orange-grey ovaries: some with dark blotches, skein cloudy, whitish, quite tough
	Sex Code	**Condition**	
	0	Not examined	
	1	Male	
	2	Female	
	3	Examine but undetermined	

Appendix 3: Detailed fishing event and catch data by set for the 2003 Hecate Strait Multi-species Survey.

Set	1		2		3		4		5		6	
Block:	E502		E503		E504		E505		E506		E406	
Date:	22-May-03		22-May-03		22-May-03		22-May-03		22-May-03		22-May-03	
	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish
Time:	7:32	8:06	8:44	9:14	9:51	10:25	11:29	12:00	13:50	14:24	15:54	16:26
Depth (Meters):	42	43	57	58	64	84	95	95	112	113	128	125
Latitude (Deg, Min):	53°40.8'	53°42.31'	53°42.55'	53°41.22'	53°41.5'	53°42.91'	53°41.74'	53°44.42'	53°46.11'	53°44.66'	53°43.77'	53°42.44'
Longitude (Deg, Min):	130°35.11'	130°34.63'	130°35.27'	130°35.81'	130°27.24'	130°36.81'	130°37.85'	130°37.7'	130°39.48'	130°39.21'	130°44.95'	130°44.64'
Direction (Deg, True):	017		184		014		174		172		169	
Duration (minutes):	34		30		34		31		34		32	
Locality:Major/Minor	08 / 05		08 / 05		08 / 05		08 / 05		08 / 05		08 / 05	
Flatfish												
Arrowtooth flounder	-		-		84.4		25.1		88.9		328.3	
Butter sole	-		-		-		-		-		-	
Curlfin sole	4		0.7		-		-		-		-	
Dover sole	0.3		25.7		16.2		99.8		58.4		202.6	
English sole	5		54		109		2.3		-		0.5	
Flathead sole	-		0.3		9.7		123.9		163.8		38.3	
Pacific halibut	11		24.8		5		-		3.4		4.8	
Pacific sanddab	12		357.3		2		-		-		-	
Petrale sole	2		34.4		5.8		1.1		-		2	
Rex sole	-		12.8		36.2		33.2		28.6		59.2	
Sand sole	-		-		-		-		-		-	
Slender sole	-		-		-		3.2		9.9		27.7	
Southern rock sole	106		9.8		0.3		-		0.2		0.4	
Speckled sandab	-		-		-		-		-		-	
Starry flounder	-		3.1		-		-		-		-	
Rockfish												
Black rockfish	-		-		-		-		-		-	
Bocaccio	-		-		-		-		-		-	
Brown rockfish	-		-		-		-		-		-	
Canary rockfish	-		-		-		1.4		-		1.4	
Copper rockfish	-		-		-		-		-		-	
Darkblotched rockfish	-		-		-		-		-		-	
Greenstriped rockfish	-		-		-		-		-		-	
Pacific ocean perch	-		-		-		-		-		-	
Quillback rockfish	0.2		-		-		-		-		-	
Redbanded rockfish	-		-		-		-		-		-	
Redstripe rockfish	-		-		-		-		-		-	
Rougheye rockfish	-		-		-		-		-		-	
Shortspine thornyhead	-		-		-		-		-		-	
Silvergray rockfish	-		-		-		-		-		-	
Tiger rockfish	-		-		-		-		-		-	
Yellowtail rockfish	-		-		-		4.6		4.1		-	
Skates												
Big skate	-		-		-		-		-		17.9	
Longnose skate	-		-		2.8		2.7		-		-	
Sandpaper skate	-		-		-		-		-		-	
Skate	-		-		-		-		-		-	
Spiny dogfish	-		-		-		18		22		-	
Spotted ratfish	75		30.2		11.4		13.5		4.6		22.1	
Other												
Bigfin eelpout	-		-		-		-		0.2		0.4	
Brown Irish lord	-		-		-		-		-		-	
Buffalo sculpin	-		-		-		-		-		-	
Chinook salmon	-		0.2		-		-		-		-	
Eelpouts	-		-		-		-		-		-	
Eulachon	-		-		-		1		1		2.6	
Great sculpin	-		-		-		-		-		-	
Kelp greenling	-		-		-		-		-		-	
Lingcod	-		0.2		-		-		-		6.9	
Northern ronquil	-		-		-		-		-		-	
Pacific cod	-		3		6.8		1		11.4		4.5	
Pacific hake	-		-		7		1		-		-	
Pacific herring	2		0.5		2		0.2		1.6		1.2	
Pacific sand lance	-		-		-		-		-		-	
Pacific sandfish	-		-		-		-		-		-	
Pacific staghorn sculpin	-		-		-		-		-		-	
Pacific tomcod	-		4.1		114.2		50.02		1.5		0.5	
Red gunnel	-		-		-		-		-		-	
Red Irish lord	-		-		-		-		-		-	
Rock prickleback	-		-		-		-		-		-	
Roughback sculpin	0.3		-		-		-		-		-	
Sablefish	-		-		-		-		-		6.5	
Saddleback gunnel	-		-		-		-		-		-	
Shiner perch	-		-		0.07		-		-		-	
Slim sculpin	-		-		-		-		-		-	
Snake prickleback	-		-		-		-		-		-	
Sturgeon poacher	-		-		1.4		-		-		-	
Walleye pollock	-		-		0.3		30.3		32.9		0.8	
Warty poacher	-		-		-		-		-		-	
Wattled eelpout	-		-		-		-		-		-	
Wolf eel	5		-		-		-		-		-	
Total catch (kg)	225.5		573.5		415.67		421.49		434.7		734	

Appendix 3: Detailed fishing event and catch data by set for the 2003 Hecate Strait Multi-species Survey.

Set:	1		2		3		4		5		6	
Block:	E502		E503		E504		E505		E506		E406	
Date:	22-May-03		22-May-03		22-May-03		22-May-03		22-May-03		22-May-03	
	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish
Time:	7:32	8:06	8:44	9:14	9:51	10:25	11:29	12:00	13:50	14:24	15:54	16:26
Depth (Meters):	42	43	57	58	64	64	95	95	112	113	128	125
Latitude (Deg, Min):	53°40.8'	53°42.31'	53°42.55'	53°41.22'	53°41.5'	53°42.91'	53°41.74'	53°44.42'	53°46.11'	53°44.66'	53°43.77'	53°42.44'
Longitude (Deg, Min):	130°35.11'	130°34.63'	130°35.27'	130°35.81'	130°27.24'	130°36.81'	130°37.85'	130°37.7'	130°39.48'	130°39.21'	130°44.95'	130°44.64'
Direction (Deg, True):	017		184		014		174		172		169	
Duration (minutes):	34		30		34		31		34		32	
Locality:Major/Minor	08 / 05		08 / 05		08 / 05		08 / 05		08 / 05		08 / 05	
Flatfish												
Arrowtooth flounder	-		-		84.4		25.1		88.9		328.3	
Butter sole	-		-		-		-		-		-	
Curlfin sole	4		0.7		-		-		-		-	
Dover sole	0.3		25.7		16.2		99.8		58.4		202.6	
English sole	5		54		109		2.3		-		0.5	
Flathead sole	-		0.3		9.7		123.9		163.8		38.3	
Pacific halibut	11		24.8		5		-		3.4		4.8	
Pacific sanddab	12		357.3		2		-		-		-	
Petrale sole	2		34.4		5.8		1.1		-		2	
Rex sole	-		12.8		36.2		33.2		28.6		59.2	
Sand sole	-		-		-		-		-		-	
Slender sole	-		-		-		3.2		9.9		27.7	
Southern rock sole	106		9.8		0.3		-		0.2		0.4	
Speckled sandab	-		-		-		-		-		-	
Starry flounder	-		3.1		-		-		-		-	
Rockfish	-		-		-		-		-		-	
Black rockfish	-		-		-		-		-		-	
Bocaccio	-		-		-		-		-		-	
Brown rockfish	-		-		-		-		-		-	
Canary rockfish	-		-		-		1.4		-		1.4	
Copper rockfish	-		-		-		-		-		-	
Darkblotched rockfish	-		-		-		-		-		-	
Greenstriped rockfish	-		-		-		-		-		-	
Pacific ocean perch	-		-		-		-		-		-	
Quillback rockfish	0.2		-		-		-		-		-	
Redbanded rockfish	-		-		-		-		-		-	
Redstripe rockfish	-		-		-		-		-		-	
Rougheye rockfish	-		-		-		-		-		-	
Shortspine thornyhead	-		-		-		-		-		-	
Silvergray rockfish	-		-		-		-		-		-	
Tiger rockfish	-		-		-		-		-		-	
Yellowtail rockfish	-		-		-		4.6		4.1		-	
Selachii	-		-		-		-		-		-	
Big skate	-		-		-		-		-		17.9	
Longnose skate	-		-		2.8		2.7		-		-	
Sandpaper skate	-		-		-		-		-		-	
Skate	-		-		-		-		-		-	
Spiny dogfish	-		-		-		18		22		-	
Spotted ratfish	75		30.2		11.4		13.5		4.6		22.1	
Roundfish	-		-		-		-		-		-	
Bigfin eelpout	-		-		-		-		0.2		0.4	
Brown Irish lord	-		-		-		-		-		-	
Buffalo sculpin	-		-		-		-		-		-	
Chinook salmon	-		0.2		-		-		-		-	
Eelpouts	-		-		-		-		-		-	
Eulachon	-		-		-		1		1		2.6	
Great sculpin	-		-		-		-		-		-	
Kelp greenling	-		-		-		-		-		-	
Lingcod	-		0.2		-		-		-		6.9	
Northern ronquil	-		-		-		-		-		-	
Pacific cod	-		3		6.8		1		11.4		4.5	
Pacific hake	-		-		7		1		-		-	
Pacific herring	2		0.5		2		0.2		1.6		1.2	
Pacific sand lance	-		-		-		-		-		-	
Pacific sandfish	-		-		-		-		-		-	
Pacific staghorn sculpin	-		-		-		-		-		-	
Pacific tomcod	-		4.1		114.2		50.02		1.5		0.5	
Red gunnel	-		-		-		-		-		-	
Red Irish lord	-		-		-		-		-		-	
Rock prickleback	-		-		-		-		-		-	
Roughback sculpin	0.3		-		-		-		-		-	
Sablefish	-		-		-		-		-		6.5	
Saddleback gunnel	-		-		-		-		-		-	
Shiner perch	-		-		0.07		-		-		-	
Slim sculpin	-		-		-		-		-		-	
Snake prickleback	-		-		-		-		-		-	
Sturgeon poacher	-		-		1.4		-		-		-	
Walleye pollock	-		-		0.3		30.3		32.9		0.8	
Warty poacher	-		-		-		-		-		-	
Wattled eelpout	-		-		-		-		-		-	
Wolf eel	5		-		-		-		-		-	
Invertebrates	2.7		12.4		4.1		9.17		2.2		5.4	
Total catch (kg)	225.5		573.5		415.67		421.49		434.7		734	

Appendix Table 3: Continued

Block:	E403		D404		E302		D303		D304		D302	
Date:	24-May-03		24-May-03		24-May-03		24-May-03		24-May-03		24-May-03	
	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish
Time:	7:55	8:36	9:15	9:46	11:04	11:34	12:49	13:19	14:10	14:41	15:36	16:06
Depth (Meters):	64	68	83	85	50	51	57	68	76	76	38	44
Latitude (Deg, Min):	53°35.34'	53°54.53'	53°52.68'	53°52.09'	53°48.43'	53°47.46'	53°54.82'	53°54.02'	53°57.1'	53°56.04'	53°58.92'	53°57.95'
Longitude (Deg, Min):	130°55.47'	130°53.84'	130°53.13'	130°51.05'	131°0.9'	130°59.44'	131°3.88'	131°2.15'	131°2.1'	131°0.96'	131°7.81'	131°6.63'
Direction (Deg, True):	143		134		139		125		159		136	
Duration (minutes):	41		31		30		30		31		30	
Locality:Major/Minor	08 / 05		08 / 04		08 / 05		08 / 04		08 / 04		08 / 04	
Arrowtooth flounder	2.2		69.7		-		3.3		79.3		3.9	
Butter sole	-		0.6		-		-		0.9		8.6	
Curlfin sole	0.3		-		0.2		-		-		-	
Dover sole	1.4		30.3		0.7		3		18.7		-	
English sole	6.4		99.6		7		56.3		108		106.8	
Flathead sole	-		32		-		-		34.6		-	
Pacific halibut	9.3		6.3		22.4		2.6		-		-	
Pacific sanddab	4		53.8		-		65.2		181.5		-	
Petrale sole	0.2		0.3		-		2.7		-		-	
Rex sole	0.08		30		-		18.8		36.7		0.9	
Sand sole	-		0.3		3.7		15.8		0.5		23	
Slender sole	-		-		-		-		-		-	
Southern rock sole	24.1		5.2		23.7		23.8		6.7		27.7	
Speckled sandab	-		-		-		-		-		-	
Starry flounder	-		-		-		-		-		-	
Black rockfish	-		-		-		-		-		-	
Bocaccio	-		-		-		-		-		-	
Brown rockfish	-		-		-		-		-		-	
Canary rockfish	-		-		-		-		-		-	
Copper rockfish	-		-		-		-		-		-	
Darkblotched rockfish	-		-		-		-		-		-	
Greenstriped rockfish	-		-		-		-		-		-	
Pacific ocean perch	-		-		-		-		-		-	
Quillback rockfish	14.9		-		-		-		18		-	
Redbanded rockfish	-		-		-		-		-		-	
Redstripe rockfish	-		-		-		-		-		-	
Rougheye rockfish	-		-		-		-		-		-	
Shortspine thornyhead	-		-		-		-		-		-	
Silvergray rockfish	-		-		-		-		-		-	
Tiger rockfish	-		-		-		-		-		-	
Yellowtail rockfish	-		-		-		-		0.7		-	
Big skate	-		-		108.2		-		-		0.46	
Longnose skate	-		-		-		-		-		-	
Sandpaper skate	-		-		-		-		-		-	
Skate	-		-		-		-		-		-	
Spiny dogfish	-		-		-		2.1		-		-	
Spotted ratfish	37.8		2.6		45		14.2		7		14.8	
Bigfin eelpout	-		-		-		-		-		-	
Brown Irish lord	0.2		-		-		-		-		-	
Buffalo sculpin	-		-		-		-		-		-	
Chinook salmon	0.4		-		-		-		-		-	
Eelpouts	-		-		-		-		-		-	
Eulachon	-		-		-		-		0.02		-	
Great sculpin	-		-		-		-		-		-	
Kelp greenling	5.3		-		-		-		0.3		-	
Lingcod	0.6		-		-		-		-		-	
Northern ronquil	-		-		-		-		0.05		-	
Pacific cod	5.5		4.2		4.3		1.3		17.8		1.2	
Pacific hake	-		-		-		-		-		-	
Pacific herring	3.3		1.5		0.1		0.2		0.8		0.5	
Pacific sand lance	-		-		-		-		-		-	
Pacific sandfish	-		-		-		-		-		-	
Pacific staghorn sculpin	-		-		-		-		-		0.3	
Pacific tomcod	-		1.5		2.3		0.6		175.6		0.35	
Red gunnel	-		-		-		-		-		-	
Red Irish lord	-		-		-		-		-		-	
Rock prickleback	-		-		-		-		-		-	
Roughback sculpin	-		-		-		-		-		-	
Sablefish	7		1.2		0.5		-		1.5		-	
Saddleback gunnel	-		-		-		-		-		-	
Shiner perch	-		-		-		-		-		-	
Slim sculpin	-		-		-		-		-		-	
Snake prickleback	-		-		-		-		-		-	
Sturgeon poacher	-		0.5		0.3		0.13		0.8		0.6	
Walleye pollock	0.06		2		-		0.1		1.6		-	
Warty poacher	-		-		-		-		-		-	
Wattled eelpout	-		-		-		-		-		-	
Wolf eel	-		-		-		-		-		-	
Total catch (kg)	**204.96**		**343.4**		**231.8**		**227.63**		**702.45**		**206.21**	

Appendix Table 3: Continued

Block:	D303		C305		C304		C301		B301		B301	
Date:	24-May-03		25-May-03		25-May-03		25-May-03		26-May-03		26-May-03	
	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish
Time:	16:55	17:25	15:01	15:31	16:55	17:25	18:16	18:46	7:46	8:15	9:09	9:31
Depth (Meters):	65	66	100	95	83	80	51	53	60	66	29	23
Latitude (Deg, Min):	53°59.86'	54°0.52'	54°7.72'	54°6.05'	54°3.79'	54°2.58'	54°5.98'	54°46.57'	54°10.13'	54°8.89'	54°11.73'	54°12.59'
Longitude (Deg, Min):	130°47.42'	131°5.35'	131°3.53'	131°3.13'	131°3.63'	131°4.11'	131°7.4'	131°7.32'	131°5.79'	131°4.95'	131°9.52'	131°10.27'
Direction (Deg, True):	179		175		183		175		180		328	
Duration (minutes):	30		30		30		30		29		22	
Locality:Major/Minor	08 / 04		08 / 04		08 / 04		08 / 04		08 / 04		08 / 04	
Arrowtooth flounder	54.35		337.96		193.18		-		-		-	
Butter sole	-		-		-		0.3		28.07		4.5	
Curlfin sole	-		-		-		-		-		-	
Dover sole	190.64		361.53		303.57		1.7		3.21		0.4	
English sole	865.61		290.22		629.1		55.2		1880.7		90.3	
Flathead sole	-		23.56		83.42		-		-		-	
Pacific halibut	3.2		10.7		2.4		9.1		35.3		34.8	
Pacific sanddab	25.96		-		-		-		24.06		-	
Petrale sole	8.11		2.1		5.6		-		-		-	
Rex sole	216.61		266.65		655.44		-		-		-	
Sand sole	55.17		-		-		24.2		52.93		10.4	
Slender sole	-		-		-		-		-		-	
Southern rock sole	8.11		-		11.92		73.5		54.54		16.6	
Speckled sandab	-		-		-		-		-		-	
Starry flounder	-		-		-		-		-		2.5	
Black rockfish	-		-		-		-		-		-	
Bocaccio	4.6		-		-		-		-		-	
Brown rockfish	-		-		-		-		-		-	
Canary rockfish	-		-		-		-		-		-	
Copper rockfish	-		-		-		-		-		-	
Darkblotched rockfish	-		-		-		-		-		-	
Greenstriped rockfish	-		-		-		-		-		-	
Pacific ocean perch	-		-		-		-		-		-	
Quillback rockfish	-		-		-		-		0.32		-	
Redbanded rockfish	-		-		-		-		-		-	
Redstripe rockfish	-		-		-		-		-		-	
Rougheye rockfish	-		-		-		-		-		-	
Shortspine thornyhead	-		-		-		-		-		-	
Silvergray rockfish	-		-		-		-		-		-	
Tiger rockfish	-		-		-		-		-		-	
Yellowtail rockfish	-		1.7		-		-		-		-	
Big skate	-		-		-		0.37		3		88.4	
Longnose skate	-		-		-		-		1.7		-	
Sandpaper skate	-		-		-		-		-		-	
Skate	-		-		-		-		-		-	
Spiny dogfish	-		-		-		3.3		-		2.9	
Spotted ratfish	225.53		646.78		67.74		5.8		47.32		59.2	
Bigfin eelpout	-		-		-		-		-		-	
Brown Irish lord	-		-		-		-		-		-	
Buffalo sculpin	-		-		-		-		-		0.3	
Chinook salmon	-		-		-		-		-		-	
Eelpouts	-		-		-		-		-		-	
Eulachon	-		7.1		-		-		-		-	
Great sculpin	-		-		-		0.4		-		-	
Kelp greenling	-		-		-		-		-		-	
Lingcod	-		-		-		-		-		-	
Northern ronquil	-		-		-		-		-		-	
Pacific cod	21.9		2.6		15.8		37.5		116.3		20	
Pacific hake	-		-		-		-		-		-	
Pacific herring	4.8		0.9		3.1		6.9		-		8.5	
Pacific sand lance	-		-		-		-		0.01		-	
Pacific sandfish	-		-		-		-		-		-	
Pacific staghorn sculpin	-		-		-		-		-		-	
Pacific tomcod	235.26		9.92		331.8		0.5		2.41		6.6	
Red gunnel	-		-		-		-		-		-	
Red Irish lord	-		-		-		-		-		-	
Rock prickleback	-		-		-		-		-		-	
Roughback sculpin	-		-		-		-		-		-	
Sablefish	40.5		60		11.9		-		3.9		-	
Saddleback gunnel	-		-		-		-		-		-	
Shiner perch	-		-		-		0.03		-		-	
Slim sculpin	-		-		-		-		-		-	
Snake prickleback	-		-		-		0.04		-		0.07	
Sturgeon poacher	0.81		0.19		1.88		0.07		-		0.5	
Walleye pollock	1.22		9.3		2.51		-		-		-	
Warty poacher	-		-		-		-		-		0.1	
Wattled eelpout	-		-		-		-		-		-	
Wolf eel	-		-		-		5.4		-		-	
Total catch (kg)	**1992.7**		**2041.2**		**2500**		**280.21**		**2412.3**		**392.27**	

Appendix Table 3: Continued

Block:	B301		B302		B305		B306		B304		A303	
Date:	26-May-03		26-May-03		26-May-03		28-May-03		28-May-03		28-May-03	
	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish
Time:	10:16	10:46	11:32	12:02	14:15	14:35	8:08	8:39	10:30	10:45	11:17	11:32
Depth (Meters):	28	24	95	97	183	185	107	119	95	88	66	64
Latitude (Deg, Min):	54°14.84'	54°13.73'	54°17.57'	54°17.45'	54°17.95'	54°17.15'	54°17.41'	54°16.23'	54°19.99'	54°20.67'	54°21.11'	54°20.81'
Longitude (Deg, Min):	131°11.12'	131°10.33'	131°8.53'	131°6.33'	131°4.89'	131°4.21'	131°3.45'	131°2.78'	131°6.75'	131°6.77'	131°9.77'	131°10.74'
Direction (Deg, True):	157		095		156		160		350		240	
Duration (minutes):	30		30		20		31		15		15	
Locality:Major/Minor	06 / 04		06 / 04		06 / 04		06 / 04		06 / 04		06 / 04	
Arrowtooth flounder	-		6.7		125.8		1163.32		100.97		40.3	
Butter sole	17		4.9		-		-		-		0.2	
Curlfin sole	-		-		-		-		-		-	
Dover sole	0.2		8		170.5		149.32		85.98		9.7	
English sole	759		120.3		65.2		13.89		161.31		30.9	
Flathead sole	-		-		1.5		-		5.13		2.8	
Pacific halibut	64.2		21.9		111.7		262.3		23.5		6.5	
Pacific sanddab	-		0.7		-		-		-		-	
Petrale sole	-		-		-		-		-		-	
Rex sole	-		3.1		74		20.84		54.43		17.7	
Sand sole	12.5		-		-		-		-		-	
Slender sole	-		-		-		-		-		-	
Southern rock sole	110.4		5.8		1.6		-		-		-	
Speckled sandab	-		-		-		-		-		-	
Starry flounder	7.2		-		2.6		-		-		-	
Black rockfish	-		-		-		-		-		-	
Bocaccio	-		-		-		-		-		-	
Brown rockfish	-		-		-		-		-		-	
Canary rockfish	-		-		-		-		-		-	
Copper rockfish	-		-		-		-		-		-	
Darkblotched rockfish	-		-		-		-		-		-	
Greenstriped rockfish	-		-		-		-		-		-	
Pacific ocean perch	-		-		-		5.21		-		-	
Quillback rockfish	-		-		-		-		-		-	
Redbanded rockfish	-		-		-		-		-		-	
Redstripe rockfish	-		-		-		-		-		-	
Rougheye rockfish	-		-		-		13.89		-		-	
Shortspine thornyhead	-		-		-		-		-		-	
Silvergray rockfish	-		-		-		-		-		-	
Tiger rockfish	-		-		-		-		-		-	
Yellowtail rockfish	-		-		-		-		-		-	
Big skate	109.6		46.3		-		15.7		-		-	
Longnose skate	2.5		-		-		-		-		-	
Sandpaper skate	-		-		4.4		2.9		-		-	
Skate	-		-		-		10.7		-		-	
Spiny dogfish	-		4.2		-		-		-		-	
Spotted ratfish	13.6		0.6		482.4		3733.03		878.36		78.1	
Bigfin eelpout	-		-		-		-		-		-	
Brown Irish lord	-		-		-		-		-		-	
Buffalo sculpin	-		-		-		-		-		-	
Chinook salmon	-		-		-		-		-		-	
Eelpouts	-		-		-		-		-		-	
Eulachon	-		-		1.1		-		0.06		-	
Great sculpin	-		-		-		-		-		-	
Kelp greenling	-		-		-		-		-		-	
Lingcod	-		5.1		-		52.8		3.5		-	
Northern ronquil	-		-		-		-		-		-	
Pacific cod	40.1		38.6		9		159.9		11.8		11	
Pacific hake	-		-		-		-		-		-	
Pacific herring	8.4		23.5		0.2		-		0.39		0.5	
Pacific sand lance	0.01		-		-		-		-		-	
Pacific sandfish	-		-		-		-		-		-	
Pacific staghorn sculpin	-		-		-		-		-		-	
Pacific tomcod	0.7		59.8		0.3		-		-		5.5	
Red gunnel	-		-		-		-		-		-	
Red Irish lord	-		-		-		-		-		-	
Rock prickleback	-		-		-		-		-		-	
Roughback sculpin	-		-		-		-		-		-	
Sablefish	-		-		-		15.2		2.6		-	
Saddleback gunnel	-		-		-		-		-		-	
Shiner perch	-		-		-		-		-		-	
Slim sculpin	-		-		-		-		-		-	
Snake prickleback	-		-		-		-		-		-	
Sturgeon poacher	0.3		-		-		-		-		-	
Walleye pollock	-		0.3		-		151.06		-		0.6	
Warty poacher	-		-		-		-		-		-	
Wattled eelpout	-		-		-		-		-		-	
Wolf eel	5.1		-		-		-		-		-	
Total catch (kg)	**1229.31**		**367.7**		**1128.15**		**5898.8**		**1360**		**205.8**	

Appendix Table3: Continued

Block:	A305		A306		A307		A306		A307		A206	
Date:	28-May-03		28-May-03		28-May-03		28-May-03		28-May-03		28-May-03	
	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish
Time:	12:34	12:49	13:28	13:43	14:19	14:34	15:11	15:31	16:10	16:31	17:36	17:56
Depth (Meters):	104	112	117	122	137	133	124	124	139	133	120	123
Latitude (Deg, Min):	54°22.29'	54°22.87'	54°24.14'	54°24.69'	54°27.32'	54°27.92'	54°28.46'	54°29.06'	54°26.55'	54°26.63'	54°23.15'	54°22.4'
Longitude (Deg, Min):	131°6.14'	131°5.71'	131°6.02'	131°6.85'	131°7.35'	131°7.9'	131°14.6'	131°15.63'	131°14.76'	131°13.18'	131°16.63'	131°17.19'
Direction (Deg, True):	014		310		320		310				215	
Duration (minutes):	15		15		15		20		21		20	
Locality:Major/Minor	08 / 04		08 / 04		08 / 04		08 / 04		08 / 04		08 / 04	
Arrowtooth flounder	112.8		139.9		181.2		252.3		234.5		1224.8	
Butter sole	-		-		-		-		-		-	
Curlfin sole	-		-		-		-		-		-	
Dover sole	64.9		82.2		152.8		35.5		38.4		26.5	
English sole	24.3		33.7		-		-		-		2.4	
Flathead sole	1.4		0.1		7.9		8.4		1.4		1.8	
Pacific halibut	4.2		-		15.4		11.8		-		-	
Pacific sanddab	-		-		-		-		-		-	
Petrale sole	0.8		1.9		-		-		-		-	
Rex sole	12.3		18.6		226.5		12.5		14.9		12.4	
Sand sole	-		-		-		-		-		-	
Slender sole	-		-		-		-		-		-	
Southern rock sole	0.8		-		-		-		-		-	
Speckled sandab	-		-		-		-		-		-	
Starry flounder	-		-		-		-		-		-	
Black rockfish	-		-		-		-		-		-	
Bocaccio	-		-		-		-		-		-	
Brown rockfish	-		-		-		-		-		-	
Canary rockfish	-		-		-		-		-		2.3	
Copper rockfish	-		-		-		-		-		-	
Darkblotched rockfish	-		-		-		-		-		-	
Greenstriped rockfish	-		-		-		-		-		-	
Pacific ocean perch	-		-		-		-		-		0.6	
Quillback rockfish	-		-		-		-		-		-	
Redbanded rockfish	-		-		-		-		-		-	
Redstripe rockfish	-		-		-		-		-		-	
Rougheye rockfish	-		-		-		-		-		-	
Shortspine thornyhead	-		-		-		-		-		-	
Silvergray rockfish	-		-		-		-		-		-	
Tiger rockfish	-		-		-		-		-		-	
Yellowtail rockfish	-		-		25.2		-		1.6		9.5	
Big skate	-		-		-		-		-		-	
Longnose skate	-		-		-		-		-		-	
Sandpaper skate	-		-		-		-		-		-	
Skate	-		-		-		-		-		-	
Spiny dogfish	-		-		-		-		-		-	
Spotted ratfish	51.9		136		14.2		10.2		10.3		15.5	
Bigfin eelpout	-		-		-		-		-		-	
Brown Irish lord	-		-		-		-		-		-	
Buffalo sculpin	-		-		-		-		-		-	
Chinook salmon	-		-		-		-		-		-	
Eelpouts	-		-		-		-		-		0.6	
Eulachon	1.3		-		24.2		10.7		91.9		3.5	
Great sculpin	-		-		-		-		-		-	
Kelp greenling	-		-		-		-		-		-	
Lingcod	-		5.1		-		-		-		-	
Northern ronquil	-		-		-		-		-		-	
Pacific cod	14.4		6.7		7		-		-		1.8	
Pacific hake	-		-		-		-		-		-	
Pacific herring	-		-		-		0.02		-		-	
Pacific sand lance	-		-		-		-		-		-	
Pacific sandfish	-		-		-		-		-		-	
Pacific staghorn sculpin	-		-		-		-		-		-	
Pacific tomcod	0.5		-		-		-		-		-	
Red gunnel	-		-		-		-		-		-	
Red Irish lord	-		-		-		-		-		-	
Rock prickleback	-		-		-		-		-		-	
Roughback sculpin	-		-		-		-		-		-	
Sablefish	2		4.5		5.1		7.6		4.2		-	
Saddleback gunnel	-		-		-		-		-		-	
Shiner perch	-		-		-		-		-		-	
Slim sculpin	-		-		-		-		-		-	
Snake prickleback	-		-		-		-		-		-	
Sturgeon poacher	-		-		-		-		-		-	
Walleye pollock	78.9		96.3		4		-		-		1.7	
Warty poacher	-		-		-		-		-		-	
Wattled eelpout	-		-		0.4		0.9		2.1		-	
Wolf eel	-		-		-		-		-		-	
Total catch (kg)	**370.6**		**525**		**673.5**		**351.72**		**402.3**		**1303.4**	

Appendix Table 3: Continued

Block:	B103		B104		B107		B203		A205		B206	
Date:	29-May-03		29-May-03		29-May-03		29-May-03		29-May-03		29-May-03	
	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish
Time:	7:11	7:41	8:16	8:47	9:37	9:57	10:41	11:01	12:20	12:50	13:12	13:41
Depth (Meters):	38	59	86	93	131	136	67	64	99	107	121	122
Latitude (Deg, Min):	54°10.69'	54°11.64'	54°12.07'	54°12.65'	54°16.57'	54°17.04'	54°16.81'	54°17.07'	54°21.57'	54°20.4'	54°19.52'	54°19.05'
Longitude (Deg, Min):	131°44.71'	131°43.1'	131°45.7'	131°43.65'	131°38.15'	131°36.84'	131°28.32'	131°26.87'	131°15.68'	131°16.44'	131°18.35'	131°20.27'
Direction (Deg, True):	050		070		070		074		215		070	
Duration (minutes):	30		31		20		20		30		29	
Locality:Major/Minor	08 / 03		08 / 03		08 / 03		08 / 04		08 / 04		08 / 04	
Arrowtooth flounder	22		625		387.9		0.42		162.3		132.6	
Butter sole	5.4		-		-		-		-		-	
Curlfin sole	-		-		-		-		-		-	
Dover sole	-		151.7		46.4		6.06		1.5		15.1	
English sole	7.2		35.4		-		-		3.7		-	
Flathead sole	-		1.8		0.1		-		12		-	
Pacific halibut	35.9		21.1		7.8		-		-		-	
Pacific sanddab	0.3		14		-		-		-		-	
Petrale sole	8.2		3		0.3		-		-		-	
Rex sole	2.3		83.4		26.7		-		4.3		4.3	
Sand sole	-		-		-		-		-		-	
Slender sole	-		-		-		-		-		-	
Southern rock sole	1.4		-		-		-		0.15		-	
Speckled sandab	-		-		-		-		-		-	
Starry flounder	-		-		-		-		-		-	
Black rockfish	-		-		-		-		-		-	
Bocaccio	-		-		-		-		5		-	
Brown rockfish	-		-		-		-		-		-	
Canary rockfish	-		-		-		-		-		-	
Copper rockfish	-		-		-		-		-		-	
Darkblotched rockfish	-		-		-		-		-		-	
Greenstriped rockfish	-		-		0.9		-		-		-	
Pacific ocean perch	0.2		-		0.1		-		-		-	
Quillback rockfish	-		-		-		-		-		-	
Redbanded rockfish	-		-		-		-		-		-	
Redstripe rockfish	-		-		-		-		-		-	
Rougheye rockfish	-		-		-		-		-		-	
Shortspine thornyhead	-		-		-		-		-		-	
Silvergray rockfish	-		-		7.6		-		2.7		-	
Tiger rockfish	-		-		-		-		-		-	
Yellowtail rockfish	-		-		-		-		1.9		1.9	
Big skate	-		15.3		-		-		-		-	
Longnose skate	-		8.5		-		-		-		-	
Sandpaper skate	-		-		-		-		-		-	
Skate	-		-		-		-		-		-	
Spiny dogfish	7.1		-		2.3		-		-		-	
Spotted ratfish	125		54.2		17		0.43		0.6		20.5	
Bigfin eelpout	-		-		-		-		-		-	
Brown Irish lord	-		-		-		-		-		-	
Buffalo sculpin	-		-		-		-		-		-	
Chinook salmon	-		-		-		-		-		-	
Eelpouts	0.1		0.2		0.01		-		-		-	
Eulachon	-		-		-		-		-		0.2	
Great sculpin	-		-		-		-		-		-	
Kelp greenling	-		-		-		-		-		-	
Lingcod	4.2		10.3		3.4		-		-		17.7	
Northern ronquil	-		-		-		-		-		-	
Pacific cod	14.6		8.4		4.5		-		1.1		1.6	
Pacific hake	-		-		-		-		-		-	
Pacific herring	2		-		-		-		-		-	
Pacific sand lance	-		-		-		-		-		-	
Pacific sandfish	-		-		-		-		-		-	
Pacific staghorn sculpin	-		-		-		-		-		-	
Pacific tomcod	-		-		-		-		-		-	
Red gunnel	-		-		-		-		-		-	
Red Irish lord	-		-		-		-		-		-	
Rock prickleback	-		-		-		-		-		-	
Roughback sculpin	-		-		-		-		-		-	
Sablefish	-		-		-		-		-		-	
Saddleback gunnel	-		-		-		-		-		-	
Shiner perch	-		-		-		-		-		-	
Slim sculpin	-		-		-		-		-		-	
Snake prickleback	-		-		-		-		-		-	
Sturgeon poacher	-		-		-		-		-		-	
Walleye pollock	0.1		80.6		2.2		-		7.6		5.8	
Warty poacher	-		-		-		-		-		-	
Wattled eelpout	-		-		-		-		-		-	
Wolf eel	-		-		-		-		-		-	
Total catch (kg)	**238.1**		**1116.54**		**512.01**		**6.91**		**202.85**		**201.24**	

Appendix Table 3: Continued

Block:	B207		B204		B205		B206		B102		B204	
Date:	29-May-03		29-May-03		29-May-03		29-May-03		29-May-03		30-May-03	
	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish
Time:	14:05	14:35	15:10	15:22	16:05	16:22	16:59	17:20	18:20	18:51	7:07	7:37
Depth (Meters):	146	135	87	77	79	123	101	145	54	51	66	90
Latitude (Deg, Min):	54°29.6'	54°19.55'	54°19.43'	54°18.31'	54°18.22'	54°18.96'	54°18.33'	54°19.4'	54°15.62'	54°15.06'	54°17.95'	54°18.43'
Longitude (Deg, Min):	131°21.81'	131°19.72'	131°15.12'	131°16.11'	131°20.9'	131°21.47'	131°24.06'	131°23.36'	131°32.56'	131°34.48'	131°23.05'	131°20.84'
Direction (Deg, True):	090		210		350		010		250		081	
Duration (minutes):	30		12		17		21		31		30	
Locality:Major/Minor	08 / 04		08 / 04		08 / 04		08 / 04		08 / 01		08 / 04	
Arrowtooth flounder	206.4		517.2		166.4		124.9		147.9		152.6	
Butter sole	-		-		-		-		1.4		-	
Curlfin sole	-		-		-		-		-		-	
Dover sole	8.4		2.7		0.9		29.7		7.1		8.5	
English sole	-		137.8		3.8		6.2		60.1		198.2	
Flathead sole	-		4.2		-		-		-		-	
Pacific halibut	24.4		33.6		29.9		1.8		35.2		97.3	
Pacific sanddab	-		-		-		-		0.4		1.6	
Petrale sole	1.1		0.6		-		-		-		-	
Rex sole	12.8		6.3		10.1		26.5		5.5		8	
Sand sole	-		-		-		-		-		-	
Slender sole	-		-		-		-		-		-	
Southern rock sole	0.6		-		0.7		-		-		-	
Speckled sandab	-		-		-		-		-		-	
Starry flounder	-		-		-		-		-		-	
Black rockfish	-		-		-		-		-		-	
Bocaccio	-		-		-		-		-		-	
Brown rockfish	-		-		-		-		-		-	
Canary rockfish	-		-		-		-		-		-	
Copper rockfish	-		-		-		-		-		-	
Darkblotched rockfish	-		-		-		-		-		-	
Greenstriped rockfish	-		-		-		-		-		-	
Pacific ocean perch	0.4		-		-		-		-		-	
Quillback rockfish	-		-		-		-		-		-	
Redbanded rockfish	3.3		-		-		-		-		-	
Redstripe rockfish	-		-		-		-		-		-	
Rougheye rockfish	-		-		-		-		-		-	
Shortspine thornyhead	0.9		1.09		-		-		-		-	
Silvergray rockfish	-		-		-		-		-		-	
Tiger rockfish	-		-		-		-		-		-	
Yellowtail rockfish	-		-		-		1.7		-		-	
Big skate	-		-		-		-		53.4		290.6	
Longnose skate	-		-		-		-		-		-	
Sandpaper skate	-		3.9		-		-		-		2.1	
Skate	-		-		-		-		-		-	
Spiny dogfish	1.4		2.7		-		2.1		9.4		-	
Spotted ratfish	143.5		27.3		9.3		34.3		644.7		38.2	
Bigfin eelpout	-		-		-		-		-		-	
Brown Irish lord	-		-		-		-		-		-	
Buffalo sculpin	-		-		-		-		-		-	
Chinook salmon	-		-		-		-		-		-	
Eelpouts	-		-		-		-		-		-	
Eulachon	2.9		-		-		-		-		-	
Great sculpin	-		-		-		-		-		0.4	
Kelp greenling	-		-		-		-		-		-	
Lingcod	2.4		15.5		-		-		24.5		10.6	
Northern ronquil	-		-		-		-		-		-	
Pacific cod	2.2		20.5		1.5		-		-		73.8	
Pacific hake	-		-		-		-		-		-	
Pacific herring	-		3.2		-		-		23.5		0.3	
Pacific sand lance	-		-		-		-		-		-	
Pacific sandfish	-		-		-		-		-		-	
Pacific staghorn sculpin	-		-		-		-		-		-	
Pacific tomcod	-		0.2		-		-		2.9		1.8	
Red gunnel	-		-		-		-		-		-	
Red Irish lord	-		-		-		-		-		-	
Rock prickleback	-		-		-		-		-		-	
Roughback sculpin	-		-		-		-		-		-	
Sablefish	2.1		-		-		-		-		-	
Saddleback gunnel	-		-		-		-		-		-	
Shiner perch	-		-		-		-		-		-	
Slim sculpin	-		-		-		-		-		-	
Snake prickleback	-		-		-		-		-		-	
Sturgeon poacher	-		-		-		-		-		-	
Walleye pollock	0.6		-		-		0.6		15.8		1.9	
Warty poacher	-		-		-		-		-		-	
Wattled eelpout	-		-		-		-		-		-	
Wolf eel	-		-		-		-		-		5.2	
Total catch (kg)	**419.1**		**776.79**		**222.6**		**229.6**		**1031.8**		**912.9**	

Appendix Table 3: Continued

Block:	B205		B203		B202		B105		B106		B201	
Date:	30-May-03		30-May-03		30-May-03		30-May-03		30-May-03		30-May-03	
	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish
Time:	8:03	8:33	8:59	9:29	10:06	10:36	11:06	11:37	12:45	13:15	14:35	15:05
Depth (Meters):	98	95	60	61	40	50	83	106	120	116	35	29
Latitude (Deg, Min):	54°18.49'	54°18.26'	54°17.14'	54°16.68'	54°15.92'	54°15.88'	54°15.6'	54°15.36'	54°13.68'	54°14.24'	54°15.22'	54°14.41'
Longitude (Deg, Min):	131°22.03'	131°24.13'	131°26.5'	131°28.4'	131°27.08'	131°29.28'	131°33.98'	131°36.28'	131°44.03'	131°41.98'	131°24.53'	131°23.03'
Direction (Deg, True):	260		230		285		256		060		140	
Duration (minutes):	30		30		30		31		30		30	
Locality:Major/Minor	08 / 04		08 / 04		08 / 04		08 / 01		08 / 03		08 / 04	
Arrowtooth flounder	826		208.8		2.2		310.7		173.3		-	
Butter sole	-		15.2		12.4		0.2		-		9.8	
Curlfin sole	-		-		-		-		-		-	
Dover sole	70.8		-		-		105.2		62		-	
English sole	137.3		241.3		3.3		38.8		1.6		2.2	
Flathead sole	-		-		-		-		-		-	
Pacific halibut	104.8		22.6		8		38.1		-		4.2	
Pacific sanddab	-		-		-		0.6		-		-	
Petrale sole	1.4		-		-		1.4		1.4		-	
Rex sole	73.4		-		-		13.7		41.8		-	
Sand sole	-		-		-		-		-		2.1	
Slender sole	-		-		-		-		-		-	
Southern rock sole	-		-		12.2		-		1.1		3.3	
Speckled sandab	-		-		-		-		-		-	
Starry flounder	-		-		-		-		-		-	
Black rockfish	-		-		-		-		-		-	
Bocaccio	-		-		-		-		-		5.1	
Brown rockfish	-		-		-		-		-		-	
Canary rockfish	-		-		-		-		-		-	
Copper rockfish	-		-		-		-		-		-	
Darkblotched rockfish	-		-		-		-		-		-	
Greenstriped rockfish	-		-		-		-		-		-	
Pacific ocean perch	-		-		-		-		-		-	
Quillback rockfish	-		-		-		-		-		-	
Redbanded rockfish	-		-		-		-		-		-	
Redstripe rockfish	-		-		-		-		-		-	
Rougheye rockfish	-		-		-		-		-		-	
Shortspine thornyhead	-		-		-		-		-		-	
Silvergray rockfish	-		-		-		-		2.2		-	
Tiger rockfish	-		-		-		-		-		-	
Yellowtail rockfish	-		-		-		-		5.8		2.4	
Big skate	15		118.3		145.1		2.2		-		16.1	
Longnose skate	8.4		-		-		3.3		-		-	
Sandpaper skate	1		-		-		-		-		-	
Skate	-		-		-		-		-		-	
Spiny dogfish	4.8		-		1		1.7		22.4		0.02	
Spotted ratfish	73.7		179.82		43.8		249.2		41.5		-	
Bigfin eelpout	-		-		-		-		-		-	
Brown Irish lord	-		-		-		-		-		-	
Buffalo sculpin	-		-		-		-		-		-	
Chinook salmon	-		-		-		-		-		-	
Eelpouts	-		-		-		-		-		-	
Eulachon	-		-		-		-		-		-	
Great sculpin	-		-		-		-		-		-	
Kelp greenling	-		-		-		-		-		-	
Lingcod	15.8		5.3		88.5		12.4		-		-	
Northern ronquil	-		-		-		-		-		-	
Pacific cod	13.5		18.6		3		19.1		11.7		3.3	
Pacific hake	-		-		-		-		-		-	
Pacific herring	-		0.8		1.5		0.05		-		-	
Pacific sand lance	-		-		2		-		-		-	
Pacific sandfish	-		-		-		-		-		0.18	
Pacific staghorn sculpin	-		-		-		-		-		-	
Pacific tomcod	-		14.6		-		2.2		-		-	
Red gunnel	-		-		-		-		-		-	
Red Irish lord	-		-		-		-		-		-	
Rock prickleback	-		-		-		-		-		-	
Roughback sculpin	-		-		-		-		-		-	
Sablefish	-		-		-		-		-		-	
Saddleback gunnel	-		-		-		-		-		-	
Shiner perch	-		-		-		-		-		-	
Slim sculpin	-		-		-		-		-		-	
Snake prickleback	-		-		-		-		-		-	
Sturgeon poacher	-		-		-		-		-		0.3	
Walleye pollock	0.3		2.1		-		6.7		7.9		-	
Warty poacher	-		-		-		-		-		-	
Wattled eelpout	-		-		-		-		-		-	
Wolf eel	-		-		-		3.1		-		4.8	
Total catch (kg)	**1394.2**		**847.12**		**336.8**		**821.96**		**386**		**62.3**	

Appendix Table 3: Continued

Block:	B303		B304		C301		C201		D301		D201	
Date:	30-May-03		30-May-03		31-May-03		31-May-03		31-May-03		31-May-03	
	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish
Time:	16:31	16:51	18:09	18:25	8:03	8:32	9:09	9:38	10:31	10:47	11:34	12:05
Depth (Meters):	57	59	82	86	28	28	28	25	33	35	26	23
Latitude (Deg, Min):	54°14.15'	54°13.32'	54°11.59'	54°10.9'	54°7.33'	54°6.78'	54°3.11'	54°2.07'	53°59.85'	53°59.89'	53°57.48'	53°56.37'
Longitude (Deg, Min):	131°4.43'	131°5.53'	131°4.21'		131°14.59'	131°16.4'	131°18.43'	131°19.47'	131°9.17'	131°8.01'	131°16.58'	131°17.67'
Direction (Deg, True):			186		223		214		078		200	
Duration (minutes):	20		16		29		29		16		31	
Locality:Major/Minor	08 / 04		08 / 04		08 / 04		08 / 04		08 / 04		08 / 04	
Flatfish												
Arrowtooth flounder	41.1		21.21		-		-		-		-	
Butter sole	3.6		-		24.03		90.35		5.4		-	
Curlfin sole	-		-		-		-		1		0.3	
Dover sole	103.6		380.53		-		-		0.4		-	
English sole	128.5		245.64		44.27		553.1		27.5		2.9	
Flathead sole	-		2.36		-		-		-		-	
Pacific halibut	25.2		58.4		12.4		67.9		10		0.5	
Pacific sanddab	0.7		-		-		-		1.7		-	
Petrale sole	1		-		-		-		-		-	
Rex sole	840		194.98		-		-		-		-	
Sand sole	0.8		-		12.65		52.39		20.1		16.8	
Slender sole	-		-		-		-		-		-	
Southern rock sole	0.6		-		32.25		102.9		61.9		91	
Speckled sandab	-		-		-		-		-		1.12	
Starry flounder	117.3		-		-		-		-		-	
Rockfish												
Black rockfish	22.5		-		-		-		-		-	
Bocaccio	-		-		-		-		-		-	
Brown rockfish	-		-		-		-		-		-	
Canary rockfish	-		-		-		-		-		-	
Copper rockfish	-		-		-		-		0.6		-	
Darkblotched rockfish	-		-		-		-		-		-	
Greenstriped rockfish	-		-		-		-		-		-	
Pacific ocean perch	-		-		-		-		-		-	
Quillback rockfish	-		-		-		-		6.5		-	
Redbanded rockfish	-		-		-		-		-		-	
Redstripe rockfish	-		-		-		-		-		-	
Rougheye rockfish	-		-		-		-		-		-	
Shortspine thornyhead	-		-		-		-		-		-	
Silvergray rockfish	-		-		-		-		-		-	
Tiger rockfish	-		-		-		-		0.5		-	
Yellowtail rockfish	-		-		-		-		-		-	
Skate												
Big skate	96.1		-		13.9		4.2		1.22		3.86	
Longnose skate	10		2.79		1.1		-		-		-	
Sandpaper skate	-		-		-		-		-		-	
Skate	-		-		-		-		-		-	
Spiny dogfish	-		-		-		5.02		-		-	
Spotted ratfish	161.8		202.64		7.59		4.39		31.8		171.9	
Other												
Bigfin eelpout	-		-		-		-		-		-	
Brown Irish lord	-		-		-		-		-		-	
Buffalo sculpin	-		-		-		0.31		-		-	
Chinook salmon	-		-		-		-		-		-	
Eelpouts	-		-		-		-		-		-	
Eulachon	-		-		-		-		-		-	
Great sculpin	-		-		-		-		-		-	
Kelp greenling	-		-		-		-		4.2		0.8	
Lingcod	6.1		2.24		-		-		1.2		-	
Northern ronquil	-		-		-		-		-		-	
Pacific cod	21.5		20.7		6.1		7.5		1.8		0.8	
Pacific hake	-		-		-		-		-		-	
Pacific herring	2.3		-		18.3		19.45		1.6		4.7	
Pacific sand lance	-		-		-		-		-		-	
Pacific sandfish	-		-		-		0.22		-		1.3	
Pacific staghorn sculpin	-		-		2.53		2.2		-		0.7	
Pacific tomcod	36.4		18.26		894.16		53.02		0.1		-	
Red gunnel	-		-		-		-		-		-	
Red Irish lord	-		-		-		-		-		-	
Rock prickleback	-		-		-		-		-		-	
Roughback sculpin	-		-		-		-		0.06		-	
Sablefish	5.7		5.6		-		-		-		-	
Saddleback gunnel	-		-		-		-		-		-	
Shiner perch	-		-		-		6.27		-		-	
Slim sculpin	-		-		-		-		-		-	
Snake prickleback	-		-		-		-		-		-	
Sturgeon poacher	-		-		-		0.78		0.2		-	
Walleye pollock	-		-		-		-		-		-	
Warty poacher	-		-		-		-		-		-	
Wattled eelpout	-		-		-		-		-		-	
Wolf eel	-		-		-		-		-		-	
Total catch (kg)	**1741.5**		**1203.34**		**1100**		**1161.4**		**213.14**		**348.03**	

Appendix Table 3: Continued

Block:	E301		E202		E202		F303		F301		E405	
Date:	31-May-03		31-May-03		31-May-03		31-May-03		31-May-03		1-Jun-03	
	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish
Time:	13:06	13:37	14:8	14:38	15:18	15:38	16:47	17:02	18:05	18:25	7:15	7:45
Depth (Meters):	35	34	42	43	44	46	61	55	25	25	95	100
Latitude (Deg, Min):	53°48.9'	53°47.66'	53°47.68'	53°46.55'	53°42.84'	53°42.11'	53°34.76'	53°34.18'	53°31.9'	53°31.26'	53°45.41'	53°44.63'
Longitude (Deg, Min):	131°13.55'	131°13.45'	131°16.71'	131°15.77'	131°16.6'	131°15.81'	131°7.03'	131°6.92'	131°14.57'	131°13.67'	130°50.72'	130°49.01'
Direction (Deg, True):	200		160		140		170		145		160	
Duration (minutes):	31		30		20		15		20		30	
Locality:Major/Minor	08 / 05		08 / 01		08 / 01		08 / 05		08 / 01		08 / 05	
Arrowtooth flounder	-		-		2.6		-		-		74.5	
Butter sole	-		2.47		63.78		7.8		2		-	
Curlfin sole	-		-		-		0.4		-		-	
Dover sole	-		53.18		117.15		-		-		308.6	
English sole	18.5		724.8		1234.03		25.8		7.9		23.8	
Flathead sole	-		-		-		-		-		7.4	
Pacific halibut	4.9		6.9		4		-		15.4		4.9	
Pacific sanddab	-		2.47		6.51		0.2		-		-	
Petrale sole	-		-		-		-		-		4.2	
Rex sole	-		-		-		-		-		360.4	
Sand sole	21.3		58.13		292.89		14.2		26.4		-	
Slender sole	-		-		-		-		-		4.8	
Southern rock sole	-		549.16		10.41		39.1		247.7		1.5	
Speckled sandab	-		-		-		0.2		-		-	
Starry flounder	-		-		-		-		-		-	
Black rockfish	-		-		-		-		-		-	
Bocaccio	-		-		-		-		-		-	
Brown rockfish	-		-		-		-		-		-	
Canary rockfish	-		-		-		-		-		-	
Copper rockfish	-		-		-		-		-		-	
Darkblotched rockfish	-		-		-		-		-		-	
Greenstriped rockfish	-		-		-		-		-		-	
Pacific ocean perch	-		-		-		-		-		-	
Quillback rockfish	-		-		-		-		-		-	
Redbanded rockfish	-		-		-		-		-		-	
Redstripe rockfish	-		-		-		-		-		-	
Rougheye rockfish	-		-		-		-		-		-	
Shortspine thornyhead	-		-		-		-		-		-	
Silvergray rockfish	-		-		-		-		-		-	
Tiger rockfish	-		-		-		-		-		-	
Yellowtail rockfish	-		-		-		-		-		-	
Big skate	87.1		0.04		118.6		84.6		18.2		-	
Longnose skate	-		6.5		5		1.8		-		8.7	
Sandpaper skate	-		-		-		-		-		-	
Skate	-		-		-		-		-		-	
Spiny dogfish	-		-		-		0.8		4.3		-	
Spotted ratfish	67		675.32		497.26		4.8		66.6		39.5	
Bigfin eelpout	-		-		-		-		-		0.1	
Brown Irish lord	-		-		-		-		-		-	
Buffalo sculpin	-		-		-		-		-		-	
Chinook salmon	-		-		-		-		-		-	
Eelpouts	-		-		-		-		-		-	
Eulachon	-		-		-		-		-		-	
Great sculpin	-		-		-		-		-		-	
Kelp greenling	-		-		0.65		-		-		-	
Lingcod	-		-		-		-		-		-	
Northern ronquil	-		-		-		-		-		-	
Pacific cod	0.4		39.4		4.5		6.4		0.5		3.3	
Pacific hake	-		-		-		-		-		-	
Pacific herring	-		1.2		4.9		-		-		-	
Pacific sand lance	-		-		-		-		-		-	
Pacific sandfish	-		-		-		-		-		-	
Pacific staghorn sculpin	-		-		26.03		3		1.2		1.1	
Pacific tomcod	-		-		257.74		0.4		-		31.9	
Red gunnel	-		-		-		-		-		-	
Red Irish lord	-		-		-		-		-		-	
Rock prickleback	-		-		-		-		-		-	
Roughback sculpin	-		-		-		-		0.1		-	
Sablefish	-		10.2		5.5		-		-		-	
Saddleback gunnel	-		-		-		-		-		-	
Shiner perch	-		-		-		-		-		-	
Slim sculpin	-		-		-		-		-		-	
Snake prickleback	-		-		-		-		-		-	
Sturgeon poacher	0.13		-		3.91		1.9		0.2		0.9	
Walleye pollock	-		-		-		-		-		2.7	
Warty poacher	-		-		-		-		-		-	
Wattled eelpout	-		-		-		-		-		-	
Wolf eel	-		-		-		-		-		-	
Total catch (kg)	**405.35**		**2268**		**2722**		**197.9**		**398.7**		**1231.83**	

Appendix Table 3: Continued

Block:	E405		E402		E403		E404		F402		F405	
Date:	1-Jun-03		1-Jun-03		1-Jun-03		1-Jun-03		1-Jun-03		1-Jun-03	
	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish
Time:	8:14	8:34	9:19	9:39	10:33	10:54	11:20	11:40	13:5	13:25	14:16	14:36
Depth (Meters):	107	104	45	47	76	59	82	78	50	50	101	102
Latitude (Deg, Min):	53°45.51'	53°44.78'	53°42.8'	53°42.32'	53°43.04'	53°42.21'	53°41.56'	53°40.79'	53°39.98'	53°39.34'	53°38.1'	53°37.29'
Longitude (Deg, Min):	130°49.01'	130°48.3'	130°52.05'	130°50.93'	130°47.89'	130°47.6'	130°46.32'	130°46.25'	130°48.11'	130°48.97'	130°46.49'	130°46.61'
Direction (Deg, True):	155		138		155		180		200		170	
Duration (minutes):	20		20		21		20		20		20	
Locality:Major/Minor	08 / 05		08 / 05		08 / 05		08 / 05		08 / 05		08 / 05	
Arrowtooth flounder	82.8		-		3.9		37.56		-		135.47	
Butter sole	-		-		27.5		1.41		2.6		-	
Curlfin sole	-		0.5		-		-		0.6		-	
Dover sole	398.3		-		-		0.47		-		75.71	
English sole	5.1		-		57		314.52		4.9		42.15	
Flathead sole	154.2		-		-		-		-		36.83	
Pacific halibut	-		13.7		5.9		13.6		2.8		14.2	
Pacific sanddab	-		-		430.7		178.39		2.2		-	
Petrale sole	1.8		-		100.2		111.5		0.2		4	
Rex sole	169.5		-		-		0.94		-		187.03	
Sand sole	-		-		3.7		-		1.1		-	
Slender sole	16.4		-		-		-		-		0.2	
Southern rock sole	0.5		20.5		57.8		0.47		24.2		-	
Speckled sandab	-		-		-		-		-		-	
Starry flounder	-		-		-		-		-		-	
Black rockfish	-		-		-		-		-		-	
Bocaccio	-		-		-		-		-		-	
Brown rockfish	-		-		-		-		-		-	
Canary rockfish	-		-		-		-		-		-	
Copper rockfish	-		-		-		-		-		-	
Darkblotched rockfish	-		-		-		-		-		-	
Greenstriped rockfish	-		-		-		-		-		-	
Pacific ocean perch	-		-		-		-		-		-	
Quillback rockfish	-		-		-		-		-		6.14	
Redbanded rockfish	-		-		-		-		-		-	
Redstripe rockfish	-		-		-		-		-		-	
Rougheye rockfish	-		-		-		-		-		-	
Shortspine thornyhead	-		-		-		-		-		-	
Silvergray rockfish	-		-		-		-		-		-	
Tiger rockfish	-		-		-		-		-		-	
Yellowtail rockfish	-		-		-		-		-		-	
Big skate	-		24.7		16.3		30.2		52.6		-	
Longnose skate	7.4		-		-		37.2		3.7		5.1	
Sandpaper skate	-		-		-		-		-		-	
Skate	-		-		-		-		-		-	
Spiny dogfish	-		-		-		-		-		-	
Spotted ratfish	18		110.2		34.9		37.56		80.2		25.78	
Bigfin eelpout	0.1		-		-		-		-		-	
Brown Irish lord	-		-		-		-		-		-	
Buffalo sculpin	-		-		-		-		-		-	
Chinook salmon	-		-		-		-		-		-	
Eelpouts	-		-		-		-		-		-	
Eulachon	-		-		-		-		-		3	
Great sculpin	-		-		-		-		-		-	
Kelp greenling	-		-		-		-		-		-	
Lingcod	4.5		-		-		-		-		-	
Northern ronquil	-		-		-		-		-		-	
Pacific cod	5.5		-		3		20.8		0.01		190.1	
Pacific hake	-		-		-		-		-		-	
Pacific herring	-		-		0.6		0.34		-		3.8	
Pacific sand lance	-		-		0.3		-		7.7		-	
Pacific sandfish	-		-		-		-		-		-	
Pacific staghorn sculpin	0.8		-		-		-		-		-	
Pacific tomcod	2		-		165		163.83		1.6		176.8	
Red gunnel	-		-		-		-		-		-	
Red Irish lord	-		-		-		-		-		-	
Rock prickleback	-		-		-		-		-		-	
Roughback sculpin	-		-		-		-		-		-	
Sablefish	1.5		-		-		-		-		4	
Saddleback gunnel	-		-		-		-		-		-	
Shiner perch	-		-		-		0.47		-		-	
Slim sculpin	-		-		-		-		-		-	
Snake prickleback	-		-		-		-		-		-	
Sturgeon poacher	-		0.16		0.01		-		1		0.2	
Walleye pollock	0.5		-		-		1.41		-		15.76	
Warty poacher	-		-		-		-		-		-	
Wattled eelpout	-		-		-		-		-		-	
Wolf eel	-		-		-		-		-		-	
Total catch (kg)	**894.45**		**179.45**		**908.41**		**961**		**194.92**		**926.5**	

Appendix Table 3: Continued

Block:	F402		F403		F404		G405		G406		G405	
Date:	1-Jun-03		2-Jun-03		2-Jun-03		2-Jun-03		2-Jun-03		2-Jun-03	
	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish
Time:	16:17	16:37	7:18	7:38	8:23	8:46	9:55	10:27	11:01	11:31	12:31	13:1
Depth (Meters):	43	43	57	60	83	85	99	99	115	112	95	98
Latitude (Deg, Min):	53°38.92'	53°38.39'	53°37.16'	53°36.34'	53°35.46'	53°34.51'	53°28.76'	53°27.76'	53°27.52'	53°26.71'	53°22.37'	53°21.46'
Longitude (Deg, Min):	130°58.34'	130°59.41'	130°49.53'	130°50.27'	130°47.53'	130°47.95'	130°50.86'	130°52.37'	130°50.54'	130°51.92'	130°58.53'	130°57.23'
Direction (Deg, True):	230		205		195		220		224		160	
Duration (minutes):	20		20		23		32		30		30	
Locality:Major/Minor	08 / 05		08 / 05		08 / 05		08 / 05		08 / 05		07 / 06	
Arrowtooth flounder	-		-		33.42		74.8		122.4		42.2	
Butter sole	-		25.5		0.69		-		-		-	
Curlfin sole	-		2.1		-		-		-		-	
Dover sole	-		0.6		54.09		88.1		85.8		219.2	
English sole	-		-		153.66		55.3		23.1		64.5	
Flathead sole	-		-		-		14.6		35.5		6.6	
Pacific halibut	4.8		3.9		19.8		-		-		-	
Pacific sanddab	-		0.8		6.2		-		-		-	
Petrale sole	-		-		18.7		1.7		1.5		1	
Rex sole	34.3		-		46.34		96.5		30.9		165.3	
Sand sole	-		14		-		-		-		-	
Slender sole	-		-		-		2		5.2		0.25	
Southern rock sole	1.8		93.8		1.38		-		-		-	
Speckled sandab	-		-		-		-		-		-	
Starry flounder	-		-		-		-		-		-	
Black rockfish	-		-		-		-		-		-	
Bocaccio	-		-		14		-		-		-	
Brown rockfish	-		-		-		-		-		-	
Canary rockfish	-		-		-		-		-		-	
Copper rockfish	7.2		2.7		-		-		-		-	
Darkblotched rockfish	-		-		-		-		-		-	
Greenstriped rockfish	-		-		-		-		-		-	
Pacific ocean perch	-		-		-		-		0.5		-	
Quillback rockfish	10.8		1.6		-		-		7.4		1.4	
Redbanded rockfish	-		-		-		-		-		-	
Redstripe rockfish	-		-		-		-		-		-	
Rougheye rockfish	-		-		-		-		-		-	
Shortspine thornyhead	-		-		-		-		-		-	
Silvergray rockfish	-		-		-		-		0.2		-	
Tiger rockfish	-		-		-		-		-		-	
Yellowtail rockfish	-		-		-		-		-		-	
Big skate	-		-		-		-		-		-	
Longnose skate	-		-		-		-		-		-	
Sandpaper skate	-		-		-		-		-		-	
Skate	-		-		-		-		-		-	
Spiny dogfish	-		-		-		0.2		-		22.8	
Spotted ratfish	265		62.5		55.13		0.7		0.4		3.4	
Bigfin eelpout	-		-		-		-		-		-	
Brown Irish lord	-		-		-		-		-		-	
Buffalo sculpin	-		-		-		-		-		-	
Chinook salmon	-		-		-		-		-		-	
Eelpouts	-		-		-		-		-		-	
Eulachon	-		-		-		0.04		-		-	
Great sculpin	-		-		-		-		-		-	
Kelp greenling	3.4		7.5		-		-		-		-	
Lingcod	0.4		0.6		-		-		5.2		10.2	
Northern ronquil	-		-		-		-		-		-	
Pacific cod	-		6.4		34.9		1.5		1.4		7.2	
Pacific hake	-		-		-		-		-		-	
Pacific herring	-		-		4.4		-		1.5		0.99	
Pacific sand lance	0.4		0.2		-		-		-		-	
Pacific sandfish	-		-		-		-		-		-	
Pacific staghorn sculpin	-		-		-		-		-		-	
Pacific tomcod	-		-		146.77		12.6		-		35.6	
Red gunnel	-		-		-		-		-		-	
Red Irish lord	0.5		-		-		-		-		-	
Rock prickleback	-		-		-		-		-		-	
Roughback sculpin	-		-		-		-		-		-	
Sablefish	-		-		-		-		-		1.1	
Saddleback gunnel	-		-		-		-		-		-	
Shiner perch	-		-		-		-		-		-	
Slim sculpin	-		-		-		-		-		-	
Snake prickleback	-		-		-		-		-		-	
Sturgeon poacher	-		2.1		0.69		-		-		-	
Walleye pollock	-		-		58.05		3		0.4		5.5	
Warty poacher	-		-		-		-		-		-	
Wattled eelpout	-		-		-		-		-		-	
Wolf eel	-		-		-		-		-		-	
Total catch (kg)	**420.8**		**241.6**		**648.3**		**351.04**		**321.4**		**587.24**	

Appendix Table 3: Continued

Block:	G404		G302		G301		F302		G201		H201	
Date:	2-Jun-03		2-Jun-03		2-Jun-03		2-Jun-03		2-Jun-03		3-Jun-03	
	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish
Time:	13:49	14:19	14:56	15:26	16:17	16:47	17:43	18:14	19:06	19:32	7:12	7:18
Depth (Meters):	79	81	50	50	31	30	49	42	26	28	25	27
Latitude (Deg, Min):	53°21.69'	53°20.52'	53°23.23'	53°22.47'	53°25.63'	53°25.91'	53°31.52'	53°30.27'	53°26.5'	53°26.87'	53°18.76'	53°18.56'
Longitude (Deg, Min):	131°0.53'	131°0.03'	131°3.32'	131°4.88'	131°9.6'	131°11.56'	131°9.31'	131°9.11'	131°17.51'	131°19.19'	131°15.75'	131°15.48'
Direction (Deg, True):	176		220				160		290		144	
Duration (minutes):	30		30		30		31		26		6	
Locality:Major/Minor	07 / 06		07 / 02		08 / 01		08 / 01		08 / 01		07 / 02	
Arrowtooth flounder	1.4		-		-		-		-		-	
Butter sole	-		-		-		-		-		-	
Curffin sole	-		1.9		0.1		0.7		0.13		-	
Dover sole	13.1		-		-		-		-		-	
English sole	125.6		-		3.8		0.2		1.4		-	
Flathead sole	-		-		-		-		-		-	
Pacific halibut	17.6		-		6.2		8.6		35.5		-	
Pacific sanddab	60		-		-		-		-		-	
Petrale sole	28.4		-		-		-		-		-	
Rex sole	20.3		-		-		-		-		-	
Sand sole	-		6		21.6		2.2		6.4		0.35	
Slender sole	-		-		-		-		-		-	
Southern rock sole	1.3		78.2		286.5		70.6		79.3		4.06	
Speckled sandab	-		-		-		-		-		-	
Starry flounder	-		-		-		-		4.5		-	
Black rockfish	-		-		-		-		-		-	
Bocaccio	-		-		-		-		-		-	
Brown rockfish	-		-		-		-		-		-	
Canary rockfish	-		-		-		-		-		-	
Copper rockfish	-		1		-		-		-		-	
Darkblotched rockfish	-		-		-		-		-		-	
Greenstriped rockfish	-		-		-		-		-		-	
Pacific ocean perch	-		-		-		-		-		-	
Quillback rockfish	-		1.4		-		-		-		-	
Redbanded rockfish	-		-		-		-		-		-	
Redstripe rockfish	-		-		-		-		-		-	
Rougheye rockfish	-		-		-		-		-		-	
Shortspine thornyhead	-		-		-		-		-		-	
Silvergray rockfish	-		-		-		-		-		-	
Tiger rockfish	-		-		-		-		-		-	
Yellowtail rockfish	-		-		0.1		-		-		-	
Big skate	-		577.5		72.4		47.6		2.9		-	
Longnose skate	4		3		-		-		-		-	
Sandpaper skate	-		-		-		-		-		-	
Skate	-		-		-		-		-		-	
Spiny dogfish	35.2		5.3		-		-		1.1		-	
Spotted ratfish	4.3		146.1		60		50.5		74.3		4.86	
Bigfin eelpout	-		-		-		-		-		-	
Brown Irish lord	-		-		-		-		-		-	
Buffalo sculpin	-		-		-		-		-		-	
Chinook salmon	-		-		-		-		-		-	
Eelpouts	-		-		-		-		-		-	
Eulachon	-		-		-		-		-		-	
Great sculpin	-		-		-		-		-		-	
Kelp greenling	-		4.4		-		-		-		0.25	
Lingcod	2.8		0.3		-		-		-		-	
Northern ronquil	-		-		-		-		-		-	
Pacific cod	0.9		-		16		1.13		0.8		-	
Pacific hake	-		-		-		-		-		-	
Pacific herring	1.8		-		-		0.4		-		-	
Pacific sand lance	-		-		-		-		-		-	
Pacific sandfish	-		-		-		-		-		-	
Pacific staghorn sculpin	-		-		-		-		-		-	
Pacific tomcod	68.1		-		-		-		-		-	
Red gunnel	-		-		-		-		-		-	
Red Irish lord	-		-		-		-		-		0.68	
Rock prickleback	-		-		-		-		-		-	
Roughback sculpin	-		-		-		-		-		-	
Sablefish	-		-		-		-		-		-	
Saddleback gunnel	-		-		-		-		-		-	
Shiner perch	-		-		-		-		-		-	
Slim sculpin	-		-		-		-		-		-	
Snake prickleback	-		-		-		-		-		-	
Sturgeon poacher	0.4		-		0.75		0.4		-		-	
Walleye pollock	-		-		-		-		-		-	
Warty poacher	-		-		-		-		-		-	
Wattled eelpout	-		-		-		-		-		-	
Wolf eel	-		6.05		-		-		-		-	
Total catch (kg)	**388.6**		**844.35**		**472.85**		**183.53**		**208.83**		**40.64**	

Appendix Table3: Continued

Block:	H302		H301		H303		H304		H304		H405	
Date:	3-Jun-03		3-Jun-03		3-Jun-03		3-Jun-03		3-Jun-03		3-Jun-03	
	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish
Time:	8:10	8:40	9:05	9:36	10:29	10:49	11:15	11:35	12:21	12:41	13:18	13:38
Depth (Meters):	38	38	35	32	63	62	77	75	67	70	95	98
Latitude (Deg, Min):	53°15.24'	53°13.98'	53°14.56'	53°15.76'	53°13.33'	53°14.19'	53°15.57'	53°16.45'	53°17.79'	53°18.62'	53°18.61'	53°17.84'
Longitude (Deg, Min):	131°10.19'	131°9.4'	131°6.83'	131°8.01'	131°0.81'	131°1.21'	130°59.75'	131°0.02'	131°1.84'	131°1.3'	130°55.3'	130°54.83'
Direction (Deg, True):	162				350		350		030		160	
Duration (minutes):	30		31		20		20		20		20	
Locality:Major/Minor	07 / 02		07 / 02		07 / 02		07 / 06		07 / 06		07 / 06	
Arrowtooth flounder	-		-		-		10.5		0.3		2.3	
Butter sole	2.1		-		-		-		1.86		0.2	
Curlfin sole	29		-		-		2.1		1.8		-	
Dover sole	-		-		-		0.15		1.88		31	
English sole	4.7		-		0.5		57.5		152.6		32.4	
Flathead sole	-		-		-		0.2		-		-	
Pacific halibut	5.7		1.7		13.5		1.5		5.7		19.4	
Pacific sanddab	-		-		0.7		-		7.65		7.6	
Petrale sole	-		-		1.6		1.2		-		4	
Rex sole	-		-		-		0.8		-		29	
Sand sole	34.2		6.2		0.8		-		-		-	
Slender sole	-		-		-		-		-		-	
Southern rock sole	147.7		87.2		2.1		0.6		2.35		-	
Speckled sandab	-		-		-		-		-		-	
Starry flounder	-		-		-		-		-		-	
Black rockfish	-		-		-		-		-		-	
Bocaccio	-		-		-		-		-		-	
Brown rockfish	-		-		-		-		-		-	
Canary rockfish	-		-		-		-		-		-	
Copper rockfish	0.5		-		-		-		-		-	
Darkblotched rockfish	-		-		-		-		-		-	
Greenstriped rockfish	-		-		-		-		-		-	
Pacific ocean perch	-		-		-		-		-		-	
Quillback rockfish	4		-		-		-		-		-	
Redbanded rockfish	-		-		-		-		-		-	
Redstripe rockfish	-		-		-		-		-		-	
Rougheye rockfish	-		-		-		-		-		-	
Shortspine thornyhead	-		-		-		-		-		-	
Silvergray rockfish	-		-		-		-		-		-	
Tiger rockfish	-		-		-		-		-		-	
Yellowtail rockfish	-		-		-		-		-		-	
Big skate	14.6		48.1		62.3		-		1.4		-	
Longnose skate	-		-		-		4.1		-		-	
Sandpaper skate	-		-		-		-		-		-	
Skate	-		-		-		-		-		-	
Spiny dogfish	20		8.1		16.6		12.4		3.8		21.4	
Spotted ratfish	12.2		2		128.4		15.6		8.43		3.4	
Bigfin eelpout	-		-		-		-		-		-	
Brown Irish lord	-		-		-		-		-		-	
Buffalo sculpin	-		-		-		-		-		-	
Chinook salmon	-		-		-		-		-		-	
Eelpouts	-		-		-		-		-		-	
Eulachon	-		-		-		-		-		-	
Great sculpin	-		-		-		-		-		-	
Kelp greenling	3.4		-		-		-		-		-	
Lingcod	-		-		-		-		-		1.6	
Northern ronquil	-		-		-		-		-		-	
Pacific cod	-		-		-		3.6		0.6		0.7	
Pacific hake	-		-		-		-		-		-	
Pacific herring	1.1		-		-		0.3		-		4.4	
Pacific sand lance	-		-		-		-		-		-	
Pacific sandfish	-		-		-		-		-		-	
Pacific staghorn sculpin	-		-		-		-		-		-	
Pacific tomcod	-		-		-		26.1		0.43		5.2	
Red gunnel	-		-		-		-		-		-	
Red Irish lord	-		-		-		-		-		-	
Rock prickleback	-		-		-		-		-		-	
Roughback sculpin	-		-		-		-		-		-	
Sablefish	-		-		-		-		-		0.3	
Saddleback gunnel	-		-		-		-		-		-	
Shiner perch	-		-		-		-		-		-	
Slim sculpin	-		-		-		-		-		-	
Snake prickleback	-		-		-		-		-		-	
Sturgeon poacher	-		0.5		-		-		0.6		0.2	
Walleye pollock	-		-		-		-		-		8.1	
Warty poacher	-		-		-		-		-		-	
Wattled eelpout	-		-		-		-		-		-	
Wolf eel	-		-		-		-		-		-	
Total catch (kg)	**280.75**		**153.8**		**379.2**		**162.68**		**191.46**		**172.47**	

Appendix Table3: Continued

Block:	H407		H406		I404		I303		I302		I405	
Date:	3-Jun-03		3-Jun-03		3-Jun-03		3-Jun-03		3-Jun-03		4-Jun-03	
	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish
Time:	14:13	14:33	15:13	15:34	16:29	16:49	17:37	17:57	18:25	18:35	7:17	7:37
Depth (Meters):	135	139	120	117	85	82	58	58	51	52	101	98
Latitude (Deg, Min):	53°17.39'	53°16.63'	53°13.17'	53°12.37'	53°5.58'	53°6.06'	53°6.96'	53°6.16'	53°5.12'	53°4.74'	53°0.86'	53°0.17'
Longitude (Deg, Min):	130°51.26'	130°50.6'	130°50.72'	130°50.36'	130°52.99'	130°54.18'	130°59.13'	130°58.92'	131°0.17'	130°59.48'	130°44.09'	130°43.13'
Direction (Deg, True):	140		160		302		170		140		133	
Duration (minutes):	20		21		20		20		10		20	
Locality:Major/Minor	07 / 06		07 / 06		07 / 06		07 / 02		07 / 02		07 / 06	
Flatfish												
Arrowtooth flounder	15.5		10.5		-		0.9		-		3.1	
Butter sole	-		-		-		2.4		-		-	
Curlfin sole	-		-		-		1.5		1.6		-	
Dover sole	24		16.2		10.1		0.4		-		-	
English sole	-		2.1		97		30.5		2.4		-	
Flathead sole	20.4		2.2		-		-		-		0.62	
Pacific halibut	-		-		13.9		20.8		3.2		-	
Pacific sanddab	-		-		142.4		4		0.3		-	
Petrale sole	-		-		13.9		0.5		0.1		-	
Rex sole	60.3		76.5		17		0.8		-		2.23	
Sand sole	-		-		-		-		-		-	
Slender sole	1		0.2		-		-		-		-	
Southern rock sole	-		-		-		9.1		13.9		-	
Speckled sandab	-		-		-		-		-		-	
Starry flounder	-		-		-		-		-		-	
Rockfish												
Black rockfish	-		-		-		-		-		-	
Bocaccio	-		-		-		-		-		-	
Brown rockfish	-		-		-		-		-		-	
Canary rockfish	-		-		-		-		-		-	
Copper rockfish	-		-		-		-		8.2		-	
Darkblotched rockfish	-		-		-		-		-		-	
Greenstriped rockfish	-		-		-		-		-		-	
Pacific ocean perch	-		0.2		-		-		-		-	
Quillback rockfish	-		-		-		-		15.5		-	
Redbanded rockfish	-		-		-		-		-		-	
Redstripe rockfish	-		-		-		-		-		-	
Rougheye rockfish	-		-		-		-		-		-	
Shortspine thornyhead	-		-		-		-		-		-	
Silvergray rockfish	-		-		-		-		-		-	
Tiger rockfish	-		-		-		-		-		-	
Yellowtail rockfish	4.8		0.8		-		-		-		-	
Sharks/Skates												
Big skate	-		-		-		43.4		-		-	
Longnose skate	-		-		-		-		-		-	
Sandpaper skate	-		-		-		-		-		-	
Skate	-		-		-		-		-		-	
Spiny dogfish	1.7		23.1		4.6		18.5		-		-	
Spotted ratfish	3.4		3.8		3.4		72.6		99.9		-	
Other												
Bigfin eelpout	-		-		-		-		-		-	
Brown Irish lord	-		-		-		-		-		-	
Buffalo sculpin	-		-		-		-		-		-	
Chinook salmon	-		-		-		-		-		-	
Eelpouts	-		-		-		-		-		-	
Eulachon	0.1		0.9		-		-		-		-	
Great sculpin	-		-		-		-		-		-	
Kelp greenling	-		-		-		-		5.8		-	
Lingcod	-		-		1.4		-		2.6		-	
Northern ronquil	-		-		-		-		-		-	
Pacific cod	2.3		3.1		-		0.6		-		-	
Pacific hake	-		0.05		-		-		-		-	
Pacific herring	-		-		0.2		-		-		0.79	
Pacific sand lance	-		-		-		-		-		-	
Pacific sandfish	-		-		-		-		-		-	
Pacific staghorn sculpin	-		-		-		-		-		-	
Pacific tomcod	-		-		24.2		1.4		-		6.4	
Red gunnel	-		-		-		-		-		-	
Red Irish lord	-		-		-		-		-		-	
Rock prickleback	-		-		-		-		-		-	
Roughback sculpin	-		-		-		-		-		-	
Sablefish	-		0.4		-		-		-		-	
Saddleback gunnel	-		-		-		-		-		-	
Shiner perch	-		-		-		2.2		-		-	
Slim sculpin	-		-		-		-		-		-	
Snake prickleback	-		-		-		-		-		-	
Sturgeon poacher	0.07		-		0.02		0.06		-		-	
Walleye pollock	2.4		0.3		-		-		-		-	
Warty poacher	-		-		-		-		-		-	
Wattled eelpout	-		-		-		-		-		-	
Wolf eel	-		-		-		-		-		-	
Total catch (kg)	**137.71**		**146.35**		**328.98**		**234.06**		**188.74**		**13.14**	

Appendix Table3: Continued

Block:	J404		J503		J504		I401		I301		I301	
Date:	4-Jun-03		4-Jun-03		4-Jun-03		4-Jun-03		4-Jun-03		4-Jun-03	
	Start	**Finish**	**Start**	**Finish**	**Start**	**Finish**	**Start**	**Finish**	**Start**	**Finish**	**Start**	**Finish**
Time:	8:12	8:33	9:24	9:44	10:45	11:05	12:15	12:35	13:22	13:42	14:9	14:39
Depth (Meters):	75	77	61	57	78	77	27	26	29	26	35	35
Latitude (Deg, Min):	52°58.91'	52°59.52'	52°56.21'	52°57.02'	52°55.23'	52°56.1'	53°0.44'	53°1.16'	53°2.62'	53°2.33'	53°3.46'	53°4.78'
Longitude (Deg, Min):	130°46.92'	130°47.99'	130°39.81'	130°39.84'	130°37.7'	130°37.96'	130°52.88'	130°53.84'	131°3.64'	131°5'	131°9.32'	131°9.95'
Direction (Deg, True):	315		000		350		340		240		340	
Duration (minutes):	21		20		20		20		20		30	
Locality:Major/Minor	07 / 02		07 / 06		07 / 06		07 / 02		07 / 02		07 / 02	
Arrowtooth flounder	-		-		0.2		-		-		-	
Butter sole	-		-		0.5		-		-		-	
Curlfin sole	-		-		-		-		0.3		3	
Dover sole	-		-		0.2		-		-		-	
English sole	-		-		18.4		2.2		0.5		-	
Flathead sole	-		-		-		-		-		-	
Pacific halibut	-		-		2.5		-		-		-	
Pacific sanddab	-		-		36		2.1		-		0.1	
Petrale sole	-		-		33.2		-		-		-	
Rex sole	-		-		3		-		-		-	
Sand sole	-		-		-		11.1		17		4.4	
Slender sole	-		-		-		-		-		-	
Southern rock sole	-		-		89.4		147.9		160.3		236.9	
Speckled sandab	-		-		-		-		-		-	
Starry flounder	-		-		-		-		-		-	
Black rockfish	-		-		-		-		-		-	
Bocaccio	-		-		-		-		-		-	
Brown rockfish	-		-		-		-		-		-	
Canary rockfish	-		-		-		-		-		-	
Copper rockfish	-		-		-		-		-		-	
Darkblotched rockfish	-		-		-		-		-		-	
Greenstriped rockfish	-		-		-		-		-		-	
Pacific ocean perch	-		-		-		-		-		-	
Quillback rockfish	-		-		1.9		-		-		-	
Redbanded rockfish	-		-		-		-		-		-	
Redstripe rockfish	-		-		-		-		-		-	
Rougheye rockfish	-		-		-		-		-		-	
Shortspine thornyhead	-		-		-		-		-		-	
Silvergray rockfish	-		-		-		-		-		-	
Tiger rockfish	-		-		-		-		-		-	
Yellowtail rockfish	-		-		-		-		-		-	
Big skate	-		-		18.9		2.4		-		15.58	
Longnose skate	-		-		-		-		-		5.1	
Sandpaper skate	-		-		-		-		-		-	
Skate	-		-		-		-		-		-	
Spiny dogfish	-		-		11.5		-		4		4	
Spotted ratfish	-		-		3.1		0.3		-		-	
Bigfin eelpout	-		-		-		-		-		-	
Brown Irish lord	-		-		-		-		-		-	
Buffalo sculpin	-		-		-		-		-		-	
Chinook salmon	-		-		-		-		-		-	
Eelpouts	-		-		-		-		-		-	
Eulachon	-		-		-		-		-		-	
Great sculpin	-		-		-		-		-		-	
Kelp greenling	-		-		0.5		-		-		-	
Lingcod	-		-		-		-		-		-	
Northern ronquil	-		-		-		-		-		-	
Pacific cod	-		-		8.8		0.2		-		57.8	
Pacific hake	-		-		-		-		-		-	
Pacific herring	-		2.8		-		-		-		-	
Pacific sand lance	-		15.3		-		-		-		-	
Pacific sandfish	-		-		-		-		-		-	
Pacific staghorn sculpin	-		-		-		-		-		-	
Pacific tomcod	1.6		-		249.3		-		-		0.1	
Red gunnel	-		-		-		-		-		-	
Red Irish lord	-		-		-		-		-		-	
Rock prickleback	-		-		-		-		-		-	
Roughback sculpin	-		-		-		-		-		-	
Sablefish	-		-		-		-		-		-	
Saddleback gunnel	-		-		-		-		-		-	
Shiner perch	-		-		-		-		-		-	
Slim sculpin	-		-		-		-		-		-	
Snake prickleback	-		-		-		-		-		-	
Sturgeon poacher	-		-		0.1		-		-		-	
Walleye pollock	-		-		-		-		-		-	
Warty poacher	-		-		-		-		-		-	
Wattled eelpout	-		-		-		-		-		-	
Wolf eel	-		-		-		-		-		-	
Total catch (kg)	**1.6**		**18.1**		**481.7**		**166.6**		**182.9**		**327.88**	

Appendix Table 3: Continued

Block:	J204		K403		K402		K403		K506		K405	
Date:	4-Jun-03		5-Jun-03		5-Jun-03		5-Jun-03		5-Jun-03		5-Jun-03	
	Start	**Finish**	**Start**	**Finish**	**Start**	**Finish**	**Start**	**Finish**	**Start**	**Finish**	**Start**	**Finish**
Time:	15:59	16:29	7:18	7:48	8:19	8:48	9:19	9:45	10:52	11:24	14:06	14:26
Depth (Meters):	84	71	67	66	52	50	66	64	115	114	102	102
Latitude (Deg, Min):	52°54.88'	52°54.22'	52°42.3'	52°43.4'	52°46.05'	52°47.17'	52°47.18'	52°48.18'	52°47.4'	52°46.21'	52°42.93'	52°42.45'
Longitude (Deg, Min):	131°17.15'	131°18.85'	130°56.24'	130°55.06'	130°55.33'	130°54.47'	130°49.83'	130°48.56'	130°36.53'	130°37.7'	130°44.13'	130°45.38'
Direction (Deg, True):	230		028		025		050		211		210	
Duration (minutes):	30		30		29		26		32		20	
Locality:Major/Minor	07 / 02		07 / 02		07 / 02		07 / 02		07 / 02		7-Feb	
Flatfish												
Arrowtooth flounder	-		-		-		-		4.5		2.34	
Butter sole	-		-		-		0.3		-		-	
Curlfin sole	0.4		0.7		-		0.7		-		-	
Dover sole	3.6		-		-		-		-		0.11	
English sole	297.7		-		-		1		1.39		5.2	
Flathead sole	-		-		-		-		1.48		-	
Pacific halibut	6.6		53.9		1.6		5.5		7.2		-	
Pacific sanddab	232		0.5		-		0.4		-		10.52	
Petrale sole	-		1.2		-		1.2		-		0.35	
Rex sole	1.1		-		-		-		16.78		2.81	
Sand sole	2.6		-		2.4		-		-		-	
Slender sole	-		-		-		-		-		-	
Southern rock sole	6		38.2		108.2		43.9		-		-	
Speckled sandab	-		-		-		-		-		-	
Starry flounder	-		-		-		-		-		-	
Rockfish												
Black rockfish	-		-		-		-		-		-	
Bocaccio	-		-		-		-		-		-	
Brown rockfish	-		-		-		-		-		-	
Canary rockfish	-		-		-		-		-		-	
Copper rockfish	-		-		-		-		-		-	
Darkblotched rockfish	-		-		-		-		-		-	
Greenstriped rockfish	-		-		-		-		-		-	
Pacific ocean perch	-		-		-		-		-		-	
Quillback rockfish	-		6.3		-		1.9		-		1.58	
Redbanded rockfish	-		-		-		-		-		-	
Redstripe rockfish	-		1		-		-		-		-	
Rougheye rockfish	-		-		-		-		-		-	
Shortspine thornyhead	-		-		-		-		-		-	
Silvergray rockfish	-		-		-		-		0.86		-	
Tiger rockfish	-		-		-		-		-		-	
Yellowtail rockfish	-		-		-		-		-		-	
Skates												
Big skate	29.07		-		4.65		13.1		-		-	
Longnose skate	0.6		-		-		-		-		-	
Sandpaper skate	-		-		-		-		-		-	
Skate	-		-		-		-		-		-	
Spiny dogfish	12.4		34.7		6.9		-		1.13		1.71	
Spotted ratfish	77.3		32.1		17.9		2.8		-		-	
Other												
Bigfin eelpout	-		-		-		-		-		-	
Brown Irish lord	-		-		-		-		-		-	
Buffalo sculpin	-		-		-		-		-		-	
Chinook salmon	-		-		-		-		-		-	
Eelpouts	-		-		-		-		-		-	
Eulachon	-		-		-		-		-		-	
Great sculpin	-		-		-		-		-		-	
Kelp greenling	-		1.3		-		-		-		-	
Lingcod	-		-		-		0.86		-		2.94	
Northern ronquil	-		-		-		-		-		-	
Pacific cod	10.1		0.5		-		-		0.56		0.27	
Pacific hake	-		-		-		-		-		-	
Pacific herring	-		-		-		-		0.03		-	
Pacific sand lance	-		-		-		-		1.3		0.12	
Pacific sandfish	-		-		-		-		-		-	
Pacific staghorn sculpin	-		-		-		-		-		-	
Pacific tomcod	31.8		-		-		-		-		0.4	
Red gunnel	-		-		-		-		-		-	
Red Irish lord	-		-		-		-		-		-	
Rock prickleback	-		-		-		-		-		-	
Roughback sculpin	-		-		-		-		-		-	
Sablefish	0.1		-		-		-		-		-	
Saddleback gunnel	-		-		-		-		-		-	
Shiner perch	-		-		-		-		-		-	
Slim sculpin	-		-		-		-		-		-	
Snake prickleback	-		-		-		-		-		-	
Sturgeon poacher	0.2		-		0.15		0.3		-		-	
Walleye pollock	0.7		-		-		-		0.9		-	
Warty poacher	-		-		-		-		-		-	
Wattled eelpout	-		-		-		-		-		-	
Wolf eel	-		-		6		-		-		-	
Total catch (kg)	**714.52**		**187.6**		**154.1**		**82.96**		**36.62**		**30.3**	

Appendix 4: Detailed inventory of biological samples collected during the 2003 Hecate Strait multi-species bottom trawl survey.

Catch Date	Species	Fish No.	Tow	Tray No.	Number of Specimens Male	Femal	Unknown	Total	Sample Collected (a)	Type	Preserve
28-May-03	Arrowtooth Flounder	6020001-50	26	602-1	9	41	0	50	LWSM	otoliths	
29-May-03	Arrowtooth Flounder	6020051-100	33	602-1	26	24	0	50	LWSM	otoliths	
30-May-03	Arrowtooth Flounder	6020101-150	43	602-2	8	42	0	50	LWSM	otoliths	
30-May-03	Arrowtooth Flounder	6020150-175	46	602-2	2	23	0	25	LWSM	otoliths	
	Arrowtooth Flounder			**TOTAL**	**45**	**130**	**0**	**175**			
22-May-03	Dover Sole	6260001-50	4	626-1	42	8	0	50	LWSM	otoliths	
22-May-03	Dover Sole	6260051-100	6	626-1	15	35	0	50	LWSM	otoliths	
25-May-03	Dover Sole	6260101-150	14	626-2	19	31	0	50	LWSM	otoliths	
25-May-03	Dover Sole	6260151-200	21	626-2	12	38	0	50	LWSM	otoliths	
28-May-03	Dover Sole	6260201-217	22	626-3	5	12	0	17	LWSM	otoliths	
28-May-03	Dover Sole	6260218-261	23	626-3	11	33	0	44	LWSM	otoliths	
28-May-03	Dover Sole	6260262-300	27	626-3	2	37	0	39	LWSM	otoliths	
29-May-03	Dover Sole	6260301-350	32	626-4	24	26	0	50	LWSM	otoliths	
29-May-03	Dover Sole	6260351-365	36	626-4	0	15	0	15	LWSM	otoliths	
30-May-03	Dover Sole	6260366-400	43	626-4	6	29	0	35	LWSM	otoliths	
30-May-03	Dover Sole	6260401-425	46	626-5	2	23	0	25	LWSM	otoliths	
1-Jun-03	Dover Sole	6260426-450	60	626-5	10	15	0	25	LWSM	otoliths	
2-Jun-03	Dover Sole	6260451-500	70	626-5	40	10	0	50	LWSM	otoliths	
2-Jun-03	Dover Sole	6260501-550	71	626-6	25	25	0	50	LWSM	otoliths	
3-Jun-03	Dover Sole	6260551-575	84	626-6	9	16	0	25	LWSM	otoliths	
30-May-03	Dover Sole	6260576-675	49	626-7	16	34	0	50	LWSM	otoliths	frozen
30-May-03	Dover Sole	6260626-675	50	626-7	24	21	5	50	LWSM	otoliths	frozen
	Dover Sole			**TOTAL**	**262**	**408**	**5**	**675**			
22-May-03	Flathead Sole	6120001-50	5	612-1	32	18	0	50	LWSM	otoliths	
29-May-03	Flathead Sole	6120051-67	35	612-1	1	16	0	17	LWSM	otoliths	frozen
29-May-03	Flathead Sole	6120068-72	38	612-1	0	5	0	5	LWSM	otoliths	frozen
	Flathead Sole			**TOTAL**	**33**	**39**	**0**	**72**			
22-May-03	English Sole	6280001-50	3	628-1	19	31	0	50	LWSM	otoliths	
24-May-03	English Sole	6280051-100	8	628-1	20	30	0	50	LWSM	otoliths	
25-May-03	English Sole	6280101-150	10	628-2	33	17	0	50	LWSM	otoliths	
25-May-03	English Sole	6280151-200	11	628-2	25	25	0	50	LWSM	otoliths	
25-May-03	English Sole	6280201-250	15	628-3	31	19	0	50	LWSM	otoliths	
26-May-03	English Sole	6280251-300	17	628-3	33	17	0	50	LWSM	otoliths	
29-May-03	English Sole	6280301-350	38	628-4	6	44	0	50	LWSM	otoliths	
30-May-03	English Sole	6280351-400	42	628-4	6	44	0	50	LWSM	otoliths	
30-May-03	English Sole	6280401-435	43	628-5	6	29	0	35	LWSM	otoliths	
30-May-03	English Sole	6280436-460	44	628-5	2	23	0	25	LWSM	otoliths	
2-Jun-03	English Sole	6280461-500	69	628-5	16	24	0	40	LWSM	otoliths	
2-Jun-03	English Sole	6280501-535	71	628-6	3	32	0	35	LWSM	otoliths	
3-Jun-03	English Sole	6280536-600	82	628-6	42	23	0	65	LWSM	otoliths	
30-May-03	English Sole	6280601-650	13	628-7	24	26	0	50	LWSM	otoliths	frozen
30-May-03	English Sole	6280691-740	50	628-7	31	19	0	50	LWSM	otoliths	frozen
30-May-03	English Sole	6280651-690	49	628-8	22	18	0	40	LWSM	otoliths	frozen
	English Sole			**TOTAL**	**319**	**421**		**740**			
22-May-03	Rock Sole	6210001-100	1	621-1	30	70	0	100	LWSM	otoliths	
24-May-03	Rock Sole	6210101-150	7	621-2	26	24	0	50	LWSM	otoliths	
26-May-03	Rock Sole	6210151-200	19	621-2	11	39	0	50	LWSM	otoliths	
30-May-03	Rock Sole	6210201-211	45	621-3	0	11	0	11	LWSM	otoliths	
2-Jun-03	Rock Sole	6210212-261	75	621-3	19	31	0	50	LWSM	otoliths	
3-Jun-03	Rock Sole	6210262-300	80	621-3	15	24	0	39	LWSM	otoliths	
4-Jun-03	Rock Sole	6210301-350	94	621-4	10	40	0	50	LWSM	otoliths	
4-Jun-03	Rock Sole	6210351-400	96	621-4	31	19	0	50	LWSM	otoliths	
	Rock Sole			**TOTAL**	**142**	**258**	**0**	**400**			

Catch Date	Species	Fish No.	Tow	Tray No.	Number of Specimens Male	Femal	Unknown	Total	Sample Collected (a)	Type	Preserve
22-May-03	Petrale Sole	6070001-003	1	607-1	0	3	0	3	LWSM	otoliths	
22-May-03	Petrale Sole	6070004-038	2	607-1	10	25	0	35	LWSM	otoliths	
22-May-03	Petrale Sole	6070039-049	3	607-1	6	5	0	11	LWSM	otoliths	
22-May-03	Petrale Sole	6070050-051	4	607-1	0	2	0	2	LWSM	otoliths	
22-May-03	Petrale Sole	6070052-053	6	607-1	0	2	0	2	LWSM	otoliths	
24-May-03	Petrale Sole	6070054	7	607-1	0	1	0	1	LWSM	otoliths	
24-May-03	Petrale Sole	6070055	8	607-1	1	0	0	1	LWSM	otoliths	
24-May-03	Petrale Sole	6070056	10	607-1	0	1	0	1	LWSM	otoliths	
24-May-03	Petrale Sole	6070057-058	13	607-1	1	1	0	2	LWSM	otoliths	
25-May-03	Petrale Sole	6070059-061	14	607-1	0	3	0	3	LWSM	otoliths	
25-May-03	Petrale Sole	6070062-070	15	607-1	2	7	0	9	LWSM	otoliths	
28-May-03	Petrale Sole	6070071	25	607-1	0	1	0	1	LWSM	otoliths	
28-May-03	Petrale Sole	6070072	26	607-1	0	1	0	1	LWSM	otoliths	
29-May-03	Petrale Sole	6070073-80	31	607-1	1	7	0	8	LWSM	otoliths	
29-May-03	Petrale Sole	6070081-83	32	607-1	2	1	0	3	LWSM	otoliths	
29-May-03	Petrale Sole	6070084	33	607-1	0	1	0	1	LWSM	otoliths	
29-May-03	Petrale Sole	6070085	37	607-1	0	1	0	1	LWSM	otoliths	
29-May-03	Petrale Sole	6070086	38	607-1	1	0	0	1	LWSM	otoliths	
30-May-03	Petrale Sole	6070087	43	607-1	0	1	0	1	LWSM	otoliths	
30-May-03	Petrale Sole	6070088-89	46	607-1	1	1	0	2	LWSM	otoliths	
30-May-03	Petrale Sole	6070090-91	47	607-1	1	1	0	2	LWSM	otoliths	
30-May-03	Petrale Sole	6070092	49	607-1	0	1	0	1	LWSM	otoliths	
1-Jun-03	Petrale Sole	6070093-96	60	607-1	2	2	0	4	LWSM	otoliths	
1-Jun-03	Petrale Sole	6070097-98	61	607-1	0	2	0	2	LWSM	otoliths	
1-Jun-03	Petrale Sole	6070099-199	63	607-2	29	71	0	100	LWSM	otoliths	
1-Jun-03	Petrale Sole	6070200-244	63	607-3	12	33	0	45	LWSM	otoliths	
1-Jun-03	Petrale Sole	6070245-299	64	607-3	11	44	0	55	LWSM	otoliths	
1-Jun-03	Petrale Sole	6070300-321	64	607-4	5	17	0	22	LWSM	otoliths	
1-Jun-03	Petrale Sole	6070322	65	607-4	0	1	0	1	LWSM	otoliths	
1-Jun-03	Petrale Sole	6070323	66	607-4	0	1	0	1	LWSM	otoliths	
2-Jun-03	Petrale Sole	6070324-348	69	607-4	8	17	0	25	LWSM	otoliths	
2-Jun-03	Petrale Sole	6070349-352	70	607-4	0	4	0	4	LWSM	otoliths	
2-Jun-03	Petrale Sole	6070353-356	71	607-4	4	0	0	4	LWSM	otoliths	
2-Jun-03	Petrale Sole	6070357-358	72	607-4	2	0	0	2	LWSM	otoliths	
2-Jun-03	Petrale Sole	6070359-377	73	607-4	1	18	0	19	LWSM	otoliths	
3-Jun-03	Petrale Sole	6070378	81	607-4	0	1	0	1	LWSM	otoliths	
3-Jun-03	Petrale Sole	6070376-381	82	607-4	0	3	0	3	LWSM	otoliths	
3-Jun-03	Petrale Sole	6070382-387	84	607-4	2	4	0	6	LWSM	otoliths	
3-Jun-03	Petrale Sole	6070388-401	87	607-5	2	12	0	14	LWSM	otoliths	
3-Jun-03	Petrale Sole	6070400-403	88	607-5	0	2	0	2	LWSM	otoliths	
3-Jun-03	Petrale Sole	6070404-405	89	607-5	0	2	0	2	LWSM	otoliths	
4-Jun-03	Petrale Sole	6070406-462	93	607-5	19	38	0	57	LWSM	otoliths	
4-Jun-03	Petrale Sole	6070463-464	97	607-5	1	1	0	2	LWSM	otoliths	
5-Jun-03	Petrale Sole	6070465	98	607-5	0	1	0	1	LWSM	otoliths	
5-Jun-03	Petrale Sole	6070466-468	100	607-5	0	3	0	3	LWSM	otoliths	
5-Jun-03	Petrale Sole	6070469-471	102	607-5	1	2	0	3	LWSM	otoliths	
	Petrale Sole			**TOTAL**	**125**	**345**	**0**	**470**			
28-May-03	Rex Sole	6100001-50	27	610-1	9	41	0	50	LWSM	otoliths	
3-Jun-03	Rex Sole	6100051-100	85	610-1	36	14	0	50	LWSM	otoliths	
	Rex Sole			**TOTAL**	**45**	**55**	**0**	**100**			
22-May-03	Curlfin Sole	6350001-13	1	635	7	6	0	13	LWSM	otoliths	frozen
	Curlfin Sole			**TOTAL**	**7**	**6**	**0**	**13**			
30-May-03	Butter Sole	6190001-87	45	619-1	30	57	0	87	LWSM	otoliths	frozen
	Butter Sole			**TOTAL**	**30**	**57**	**0**	**87**			
22-May-03	Sand Sole	6350001-25	1	635-1	8	17	0	25	LWSM	otoliths	frozen
	Sand Sole			**TOTAL**	**8**	**17**	**0**	**25**			
22-May-03	Pacific Sandab	5960001-50	2	596-1	16	34	0	50	LWSM	otoliths	frozen
4-Jun-03	Pacific Sandab	5960051-100	93	596-1	23	27	0	50	LWSM	otoliths	frozen
	Pacific Sandab			**TOTAL**	**39**	**61**	**0**	**100**			

Catch Date	Species	Fish No.	Tow	Tray No.	Number of Specimens Male	Femal	Unknown	Total	Sample Collected (a)	Type	Preserve
16-Jun-02	Slender Sole	6250001-093	47	625-1	57	36	0	93	LWSM	otoliths	
	Slender Sole	6250094-117	41	625-2	0	24	0	24	LWSM	otoliths	frozen
	Slender Sole			**TOTAL**	**57**	**60**	**0**	**117**			
31-May-03	**Pacific Tomcod**	2260001-50	51	**226-1**	**30**	**15**	**5**	**50**			
22-May-03	Big Skate		6		1	0	0	1	LWSM	backbones	frozen
24-May-03	Big Skate		9		3	9	0	12	LWSM	backbones	frozen
24-May-03	Big Skate		12		0	1	0	1	LWSM	backbones	frozen
25-May-03	Big Skate		16		0	1	0	1	LWSM	backbones	frozen
26-May-03	Big Skate		17		1	0	0	1	LWSM	backbones	frozen
26-May-03	Big Skate		18		2	3	0	5	LWSM	backbones	frozen
26-May-03	Big Skate		19		16	8	0	24	LWSM	backbones	frozen
26-May-03	Big Skate		20		3	2	1	6	LWSM	backbones	frozen
28-May-03	Big Skate		22		1	0	0	1	LWSM	backbones	frozen
29-May-03	Big Skate		32		1	0	0	1	LWSM	backbones	frozen
30-May-03	Big Skate		41		3	1	0	4	LWSM	backbones	frozen
30-May-03	Big Skate		42		14	13	0	27	LWSM	backbones	frozen
30-May-03	Big Skate		43		0	1	0	1	LWSM	backbones	frozen
30-May-03	Big Skate		44		8	2	0	10	LWSM	backbones	frozen
30-May-03	Big Skate		45		9	4	0	13	LWSM	backbones	frozen
30-May-03	Big Skate		46		0	1	0	1	LWSM	backbones	frozen
30-May-03	Big Skate		48		5	3	0	8	LWSM	backbones	frozen
30-May-03	Big Skate		49		2	8	0	10	LWSM	backbones	frozen
31-May-03	Big Skate		51		3	4	0	7	LWSM	backbones	frozen
31-May-03	Big Skate		52		1	2	0	3	LWSM	backbones	frozen
31-May-03	Big Skate		53		1	0	0	1	LWSM	backbones	frozen
31-May-03	Big Skate		54		1	2	0	3	LWSM	backbones	frozen
31-May-03	Big Skate		55		1	3	0	4	LWSM	backbones	frozen
31-May-03	Big Skate		57		18	9	0	27	LWSM	backbones	frozen
31-May-03	Big Skate		58		24	15	0	39	LWSM	backbones	frozen
31-May-03	Big Skate		59		3	4	0	7	LWSM	backbones	frozen
1-Jun-03	Big Skate		62		2	1	0	3	LWSM	backbones	frozen
1-Jun-03	Big Skate		63		2	0	0	2	LWSM	backbones	frozen
1-Jun-03	Big Skate		64		3	1	0	4	LWSM	backbones	frozen
1-Jun-03	Big Skate		65		7	4	0	11	LWSM	backbones	frozen
2-Jun-03	Big Skate		74		30	26	0	56	LWSM	backbones	frozen
2-Jun-03	Big Skate		75		15	19	0	34	LWSM	backbones	frozen
2-Jun-03	Big Skate		76		11	7	0	18	LWSM	backbones	frozen
2-Jun-03	Big Skate		77		0	2	0	2	LWSM	backbones	frozen
3-Jun-03	Big Skate		79		2	6	0	8	LWSM	backbones	frozen
3-Jun-03	Big Skate		80		9	13	0	22	LWSM	backbones	frozen
3-Jun-03	Big Skate		81		6	3	0	9	LWSM	backbones	frozen
3-Jun-03	Big Skate		83		0	1	0	1	LWSM	backbones	frozen
3-Jun-03	Big Skate		88		8	3	0	11	LWSM	backbones	frozen
4-Jun-03	Big Skate		93		2	0	0	2	LWSM	backbones	frozen
4-Jun-03	Big Skate		94		0	1	0	1	LWSM	backbones	frozen
4-Jun-03	Big Skate		96		2	7	0	9	LWSM	backbones	frozen
4-Jun-03	Big Skate		97		1	4	0	5	LWSM	backbones	frozen
5-Jun-03	Big Skate		99		1	0	0	1	LWSM	backbones	frozen
5-Jun-03	Big Skate		100		2	2	0	4	LWSM	backbones	frozen
	Big Skate			**TOTAL**	**224**	**196**	**1**	**421**			
22-May-03	Longnose Skate		3		1	0	0	1	LWSM	backbones	frozen
22-May-03	Longnose Skate		4		1	0	0	1	LWSM	backbones	frozen
26-May-03	Longnose Skate		17		1	0	0	1	LWSM	backbones	frozen
26-May-03	Longnose Skate		19		1	0	0	1	LWSM	backbones	frozen
29-May-03	Longnose Skate		32		1	4	0	5	LWSM	backbones	frozen
30-May-03	Longnose Skate		43		2	0	0	2	LWSM	backbones	frozen
30-May-03	Longnose Skate		46		1	0	0	1	LWSM	backbones	frozen
30-May-03	Longnose Skate		49		2	3	0	5	LWSM	backbones	frozen
30-May-03	Longnose Skate		50		0	2	0	2	LWSM	backbones	frozen
31-May-03	Longnose Skate		51		1	0	0	1	LWSM	backbones	frozen
31-May-03	Longnose Skate		56		1	1	0	2	LWSM	backbones	frozen

Catch Date	Species	Fish No.	Tow	Tray No.	Number of Specimens Male	Femal	Unknown	Total	Sample Collected (a)	Type	Preserve
31-May-03	Longnose Skate		57		2	0	0	2	LWSM	backbones	frozen
31-May-03	Longnose Skate		58		1	0	0	1	LWSM	backbones	frozen
1-Jun-03	Longnose Skate		60		3	2	0	5	LWSM	backbones	frozen
1-Jun-03	Longnose Skate		61		0	4	0	4	LWSM	backbones	frozen
1-Jun-03	Longnose Skate		64		6	3	0	9	LWSM	backbones	frozen
1-Jun-03	Longnose Skate		65		1	0	0	1	LWSM	backbones	frozen
1-Jun-03	Longnose Skate		66		0	1	0	1	LWSM	backbones	frozen
2-Jun-03	Longnose Skate		73		0	1	0	1	LWSM	backbones	frozen
2-Jun-03	Longnose Skate		74		1	0	0	1	LWSM	backbones	frozen
3-Jun-03	Longnose Skate		82		0	1	0	1	LWSM	backbones	frozen
4-Jun-03	Longnose Skate		96		0	1	0	1	LWSM	backbones	frozen
4-Jun-03	Longnose Skate		97		0	1	0	1	LWSM	backbones	frozen
	Longnose Skate			**TOTAL**	**26**	**24**	**0**	**50**			
28-May-03	Sandpaper Skate		22		1	1	0	2	LWSM	backbones	frozen
29-May-03	Sandpaper Skate		38		1	1	0	2	LWSM	backbones	frozen
30-May-03	Sandpaper Skate		42		0	1	0	1	LWSM	backbones	frozen
30-May-03	Sandpaper Skate		43		0	1	0	1	LWSM	backbones	frozen
	Sandpaper Skate			**TOTAL**	**2**	**4**	**0**	**6**			
22-May-03	Lingcod	4670001	2		1	0	0	1	LWSM	dorsal fin	
22-May-03	Lingcod	4670002	6		1	0	0	1	LWSM	dorsal fin	
24-May-03	Lingcod	4670003-4	7		1	1	0	2	LWSM	dorsal fin	
26-May-03	Lingcod	4670005-6	20		1	1	0	2	LWSM	dorsal fin	frozen
28-May-03	Lingcod	4670007-11	22		2	3	0	5	LWSM	dorsal fin	frozen
28-May-03	Lingcod	4670012	23		1	0	0	1	LWSM	dorsal fin	
28-May-03	Lingcod	4670013	26		0	1	0	1	LWSM	dorsal fin	
29-May-03	Lingcod	4670014	31		1	0	0	1	LWSM	dorsal fin	
29-May-03	Lingcod	4670015-17	32		1	2	0	3	LWSM	dorsal fin	
29-May-03	Lingcod	4670018	33		0	1	0	1	LWSM	dorsal fin	
29-May-03	Lingcod	4670019-20	36		0	2	0	2	LWSM	dorsal fin	
29-May-03	Lingcod	4670021	37		1	0	0	1	LWSM	dorsal fin	
29-May-03	Lingcod	4670022-25	38		0	4	0	4	LWSM	dorsal fin	
29-May-03	Lingcod	4670026-34	41		1	8	0	9	LWSM	dorsal fin	
30-May-03	Lingcod	4670035-40	42		4	2	0	6	LWSM	dorsal fin	
30-May-03	Lingcod	4670041-44	43		1	3	0	4	LWSM	dorsal fin	
30-May-03	Lingcod	4670045-46	44		1	1	0	2	LWSM	dorsal fin	
30-May-03	Lingcod	4670047-59	45		2	11	0	13	LWSM	dorsal fin	
30-May-03	Lingcod	4670060-63	46		0	4	0	4	LWSM	dorsal fin	
30-May-03	Lingcod	4670064-65	49		2	0	0	2	LWSM	dorsal fin	
30-May-03	Lingcod	4670066	50		1	0	0	1	LWSM	dorsal fin	
30-May-03	Lingcod	4670067	61		0	1	0	1	LWSM	dorsal fin	
30-May-03	Lingcod	4670068	67		0	1	0	1	LWSM	dorsal fin	
2-Jun-02	Lingcod	4670069	68		0	1	0	1	LWSM	dorsal fin	
2-Jun-02	Lingcod	4670070-71	71		1	1	0	2	LWSM	dorsal fin	
2-Jun-02	Lingcod	4670072-73	72		0	2	0	2	LWSM	dorsal fin	
2-Jun-02	Lingcod	4670074	73		0	1	0	1	LWSM	dorsal fin	
2-Jun-02	Lingcod	4670075	74		1	0	0	1	LWSM	dorsal fin	
3-Jun-03	Lingcod	4670076	84		0	1	0	1	LWSM	dorsal fin	
3-Jun-03	Lingcod	4670077	87		1	0	0	1	LWSM	dorsal fin	
3-Jun-03	Lingcod	4670078	89		0	1	0	1	LWSM	dorsal fin	
5-May-03	Lingcod	4670079	102		0	1	0	1	LWSM	dorsal fin	
5-May-03	Lingcod	4670080	100		0	1	0	1	LWSM	dorsal fin	
	Lingcod			**TOTAL**	**25**	**55**	**0**	**80**			
24-May-03	Sablefish	4550001-19	7	455-1	7	12	0	19	LWSM	otoliths	
24-May-03	Sablefish	4550020-24	8	455-1	2	3	0	5	LWSM	otoliths	
24-May-03	Sablefish	4550025-28	11	455-1	1	3	0	4	LWSM	otoliths	
25-May-03	Sablefish	4550036-85	13	455-2	6	11	1	50	LWSM	otoliths	
25-May-03	Sablefish	455086-110	14	455-2	19	6	0	25	LWSM	otoliths	
1-Jun-03	Sablefish	4550214-216	61	455-2	2	1	0	3	LWSM	otoliths	
1-Jun-03	Sablefish	4550222-223	86	455-2	2	0	0	2	LWSM	otoliths	
4-Jun-03	Sablefish	4550224	97	455-2	1	0	0	1	LWSM	otoliths	

Catch Date	Species	Fish No.	Tow	Tray No.	Number of Specimens Male	Femal	Unknown	Total	Sample Collected (a)	Type	Preserve
28-May-03	Sablefish	4550111-123	22	455-3	4	9	0	13	LWSM	otoliths	
28-May-03	Sablefish	4550125-126	22	455-3	0	2	0	2	LWSM	otoliths	
1-Jun-03	Sablefish	4550217-218	66	455-4	1	1	0	2	LWSM	otoliths	
1-Jun-03	Sablefish	4550133-137	27	455-4	1	4	0	5	LWSM	otoliths	
1-Jun-03	Sablefish	4550181-195	57	455-4	9	6	0	15	LWSM	otoliths	
1-Jun-03	Sablefish	4550145-148	29	455-4	2	2	0	4	LWSM	otoliths	
29-May-03	Sablefish	4550149-150	37	455-4	0	2	0	2	LWSM	otoliths	
28-May-03	Sablefish	4550127	25	455-4	0	1	0	1	LWSM	otoliths	
30-May-03	Sablefish	4550151-163	49	455-4	8	5	0	13	LWSM	otoliths	
30-May-03	Sablefish	4550171-173	56	455-4	1	2	0	3	LWSM	otoliths	
30-May-03	Sablefish	4550164-170	50	455-4	1	6	0	7	LWSM	otoliths	
2-Jun-03	Sablefish	4550219-221	72	455-4	2	1	0	3	LWSM	otoliths	
22-May-03	Sablefish	4550029-35	6	455-4	1	6	0	7	LWSM	otoliths	
31-May-03	Sablefish	4550196-213	56	455-4	11	14	0	25	LWSM	otoliths	
28-May-03	Sablefish	4550128-132	26	455-4	2	3	0	5	LWSM	otoliths	
28-May-03	Sablefish	4550138-144	28	455-4	5	2	0	7	LWSM	otoliths	
28-May-03	Sablefish	4550124	22	455-4	1	0	0	1	LWSM	otoliths	
	Sablefish			**TOTAL**	**89**	**102**	**1**	**223**			
22-May-03	Pacific Cod	2220001-8	2		5	3	0	8	LWSM		
22-May-03	Pacific Cod	2220009-12	3		1	3	0	4	LWSM		
22-May-03	Pacific Cod	2220013-14	4		1	1	0	2	LWSM		
22-May-03	Pacific Cod	2220015-22	5		2	6	0	8	LWSM		
22-May-03	Pacific Cod	2220023	6		1	0	0	1	LWSM		
24-May-03	Pacific Cod	2220024-60	7		13	24	0	37	LWSM		
24-May-03	Pacific Cod	2220061-66	8		3	3	0	6	LWSM		
24-May-03	Pacific Cod	2220067-75	9		3	6	0	9	LWSM		
24-May-03	Pacific Cod	2220076-79	10		2	2	0	4	LWSM		
24-May-03	Pacific Cod	2220080-102	11		14	9	0	23	LWSM		
24-May-03	Pacific Cod	2220103	12		0	1	0	1	LWSM		
24-May-03	Pacific Cod	2220104-230	13		26	21	0	47	LWSM		
25-May-03	Pacific Cod	2220231-234	14		2	2	0	4	LWSM		
25-May-03	Pacific Cod	2220235-254	15		8	12	0	20	LWSM		
25-May-03	Pacific Cod	2220255-368	16		55	49	0	104	LWSM		
26-May-03	Pacific Cod	2220369-624	17		123	133	0	256	LWSM		
26-May-03	Pacific Cod	2220625-658	18		15	19	0	34	LWSM		
26-May-03	Pacific Cod	2220659-700	19		24	17	0	41	LWSM		
26-May-03	Pacific Cod	2220701-715	20		11	5	0	16	LWSM		
26-May-03	Pacific Cod	2220716-722	21		5	2	0	7	LWSM		
28-May-03	Pacific Cod	2220723-780	22		27	31	0	58	LWSM		
28-May-03	Pacific Cod	2220781-782	23		0	2	0	2	LWSM		
28-May-03	Pacific Cod	2220783-788	24		3	3	0	6	LWSM		
28-May-03	Pacific Cod	2220789-802	25		8	6	0	14	LWSM		
28-May-03	Pacific Cod	2220803-806	26		2	2	0	4	LWSM		
28-May-03	Pacific Cod	2220807-812	27		5	1	0	6	LWSM		
29-May-03	Pacific Cod	2220813	30		1	0	0	1	LWSM		
29-May-03	Pacific Cod	2220814-821	31		6	2	0	8	LWSM		
29-May-03	Pacific Cod	2220822-828	32		5	2	0	7	LWSM		
29-May-03	Pacific Cod	2220829-832	33		3	1	0	4	LWSM		
29-May-03	Pacific Cod	2220833	35		0	1	0	1	LWSM		
29-May-03	Pacific Cod	2220834	36		0	1	0	1	LWSM		
29-May-03	Pacific Cod	2220835	37		1	0	0	1	LWSM		
29-May-03	Pacific Cod	2220836-847	38		6	6	0	12	LWSM		
29-May-03	Pacific Cod	2220848	39		1	0	0	1	LWSM		
29-May-03	Pacific Cod	2220849-855	43		3	4	0	7	LWSM		
30-May-03	Pacific Cod	2220856-896	42		21	20	0	41	LWSM		
30-May-03	Pacific Cod	2220897-908	46		8	4	0	12	LWSM		
30-May-03	Pacific Cod	2220909-910	45		0	2	0	2	LWSM		
30-May-03	Pacific Cod	2220911-922	47		9	3	0	12	LWSM		
30-May-03	Pacific Cod	2220923-925	44		4	3	0	7	LWSM		
30-May-03	Pacific Cod	2220930-932	48		1	2	0	3	LWSM		
30-May-03	Pacific Cod	2220933-942	50		7	3	0	10	LWSM		
30-May-03	Pacific Cod	2220943-959	49		6	11	0	17	LWSM		

Catch Date	Species	Fish No.	Tow	Tray No.	Number of Specimens Male	Femal	Unknown	Total	Sample Collected (a)	Type	Preserve
31-May-03	Pacific Cod	2220960-967	51		4	4	0	8	LWSM		
31-May-03	Pacific Cod	2220968-1011	52		21	24	0	45	LWSM		
31-May-03	Pacific Cod	2221013-1026	53		7	7	0	14	LWSM		
31-May-03	Pacific Cod	2221027-1030	54		3	3	0	6	LWSM		
31-May-03	Pacific Cod	2221033-1035	55		2	1	0	3	LWSM		
31-May-03	Pacific Cod	2221036-1198	56		86	77	0	163	LWSM		
31-May-03	Pacific Cod	2221199-1205	57		6	1	0	7	LWSM		
31-May-03	Pacific Cod	2221206-1291	58		48	38	0	86	LWSM		
31-May-03	Pacific Cod	2221290-1297	59		3	3	0	6	LWSM		
1-Jun-03	Pacific Cod	2221298-1321	63		14	10	0	24	LWSM		
1-Jun-03	Pacific Cod	2221322-1367	64		22	24	0	46	LWSM		
1-Jun-03	Pacific Cod	2221368-1369	65		2	0	0	2	LWSM		
1-Jun-03	Pacific Cod	2221370-1428	66		22	37	0	59	LWSM		
1-Jun-03	Pacific Cod	2221429-1433	60		4	1	0	5	LWSM		
1-Jun-03	Pacific Cod	2221434-1437	61		2	2	0	4	LWSM		
2-Jun-03	Pacific Cod	2221438-1468	68		15	16	0	31	LWSM		
2-Jun-03	Pacific Cod	2221469-1511	69		15	28	0	43	LWSM		
2-Jun-03	Pacific Cod	2221512	70		0	1	0	1	LWSM		
2-Jun-03	Pacific Cod	2221513	71		0	1	0	1	LWSM		
2-Jun-03	Pacific Cod	2221514-1537	72		17	7	0	24	LWSM		
2-Jun-03	Pacific Cod	2221538-1542	73		3	2	0	5	LWSM		
2-Jun-03	Pacific Cod	2221543-1584	75		23	19	0	42	LWSM		
2-Jun-03	Pacific Cod	2221585-1593	76		5	4	0	9	LWSM		
2-Jun-03	Pacific Cod	2221594-1598	77		3	2	0	5	LWSM		
3-Jun-03	Pacific Cod	2221599-1614	82		9	7	0	16	LWSM		
3-Jun-03	Pacific Cod	2221615-1620	83		2	4	0	6	LWSM		
3-Jun-03	Pacific Cod	2221621-1622	84		2	0	0	2	LWSM		
3-Jun-03	Pacific Cod	2221623-1627	85		2	3	0	5	LWSM		
3-Jun-C3	Pacific Cod	2221628-1630	86		2	1	0	3	LWSM		
3-Jun-03	Pacific Cod	2221631	87		1	0	0	1	LWSM		
3-Jun-03	Pacific Cod	2221632-1636	88		3	2	0	5	LWSM		
4-Jun-03	Pacific Cod	2221637-1675	93		20	19	0	39	LWSM		
4-Jun-03	Pacific Cod	2221676-1677	94		0	2	0	2	LWSM		
4-Jun-03	Pacific Cod	2221678	95		0	1	0	1	LWSM		
4-Jun-03	Pacific Cod	2221679-1922	96		127	117	0	244	LWSM		
4-Jun-03	Pacific Cod	2221923-1963	97		20	21	0	41	LWSM		
	Pacific Cod			**TOTAL**	**956**	**917**	**0**	**1873**			